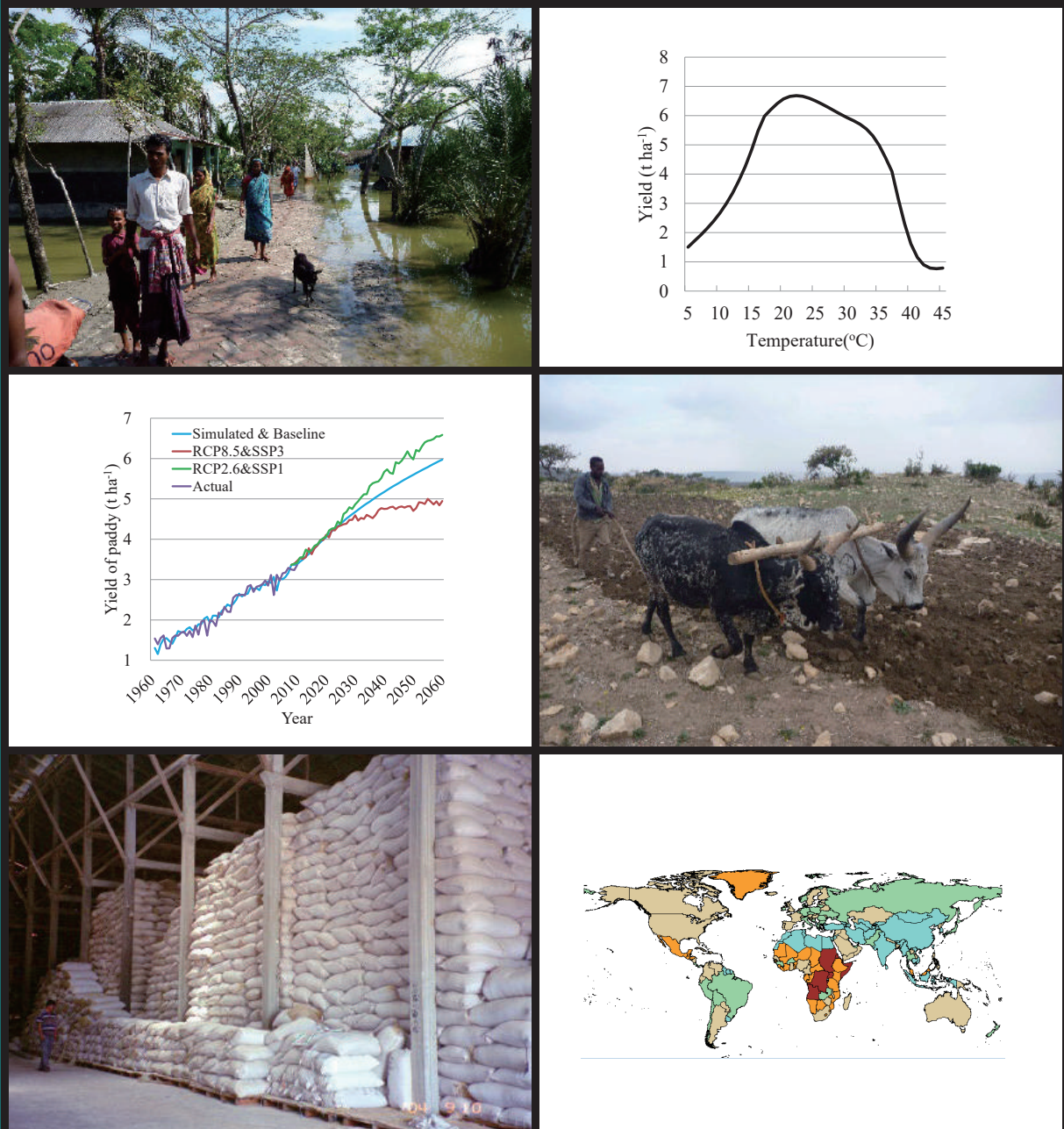


Development of an Economic Model for Evaluation of Climate Change in the Long-run for International Agriculture: EMELIA

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Chapter 1 Introduction

The fourth assessment report (AR4) of the IPCC (2007) described that the global average air temperature increased 0.74°C during the 20th century. The AR5 of the IPCC (2014) reported that the global average air temperature of the worst scenario is expected to increase by around 4°C by the end of this century. Furthermore, the World Meteorological Organization (WMO) (2018) reported that the air temperatures had increased dramatically in the summer in 2018 because of increased seawater temperatures in the western Indian Ocean and higher temperatures affecting agricultural production in southern and eastern Africa. For analyzing the effects of climate change on agricultural production and the supply, a world food model that can produce long run outlooks is necessary because climate change is expected to cause severe damage in the distant future.

Parry et al. (1999) are pioneers of climate change analysis applied to food security. They combined a world trade model and a crop model in analyses that were scientific and well-organized. Many researchers have cited their results. However, the link between the crop model and the economic model is complicated.

Ensuring model transparency, Furuya and Koyama (2005) estimated macro yield functions for crops of which the explanatory variables are climate variables, i.e., air temperature and rainfall. These crop yields are used for the world food model, which is designated as the International Food and Agricultural Policy Simulation Model (IFPSIM) (Oga and Yanagishima, 1996).

Actually, IFPSIM is a world food model developed by JIRCAS and the Policy Research Institute of the Ministry of Agriculture, Fisheries, and Forestry of Japan (PRIMAFF). The purpose of the model is evaluation of policies such as a trade agreement involving agricultural products. This model is a basis of the International Model for Policy Analysis of Agricultural Commodities and Trade (IMPACT) of the International Food Policy Research Institute (IFPRI) (Rosegrant et al., 2008).

Development of IFPSIM started around the late 1970s by the Mitsubishi Research Institute (MRI) consigned by MAFF, Japan. This model was developed by Dr. K. Oga (Ohga) and the research staff of MAFF, although it was completed by Dr. K. Yanagishima and Mr. O. Koyama, who are JIRCAS staff members. This model has been modified and

used by PRIMAFF staff members. Furthermore, Furuya and Kobayashi (2009) extended IFPSIM to a stochastic model.

In fact, IFPSIM is a synthetic model for which parameters such as elasticities of supply are introduced from other studies. Unfortunately, what articles include the original elasticities remains unknown today. To change the other world food model, the elasticities of the Agricultural sector linkage-Commodity simulation model (Aglink-Cosimo) Model (OECD, 2015), which was developed by the Organization for Economic Cooperation and Development (OECD) and the Food and Agriculture Organization of the United Nations (FAO), are determined through discussions of the authorities of the constituent countries. Furthermore, the elasticities of the World Agricultural Trade Simulation Model (WATSIM), which was developed by Dr. M. von Lampe of the Bonn University, are introduced from other research papers such as those from IFPSIM.

Some world food models have estimated their parameters of functions independently. Parameters of the Basic Linked System (BLS) (Fischer et al., 1988) of the International Institute for Applied Systems Analysis (IIASA) are obtained by estimating Linear Expenditure System (LES) models, yield functions, and feed cost functions. This model is used for the analyses of effects of climate change such as the study of Parry et al. (1999). On the other hand, the parameters of planted area and demand functions of the models of the Food and Agriculture Policy Research Institute at the University of Missouri (MU-FAPRI) are estimated by using ordinary least squares (OLS) or two-stage least squares (2SLS) method.

Ideally, obtaining elasticities of the model by estimation of the area or demand functions by the model builder is better because the estimation period of the functions is close to the time of development of the world food model and because these estimation methods are identical. However, if the countries or regions of the model are numerous, then it will be difficult for the model builder to estimate the functions.

This study was conducted to develop a world food model to elucidate climate change effects on food supply mainly in economically developing countries such as those several among Sub-Saharan African countries. Therefore, this model must

include many countries or regions of the world. To overcome these difficulties, the price elasticities of supply and demand for agricultural products examined in this study are calculated using the cost shares of the respective inputs to the output values, as obtained from data of the Global Trade Analysis Project Data Base Version 9 (GTAP9), which covers 140 countries and regions.

When analyzing climate change effects on agricultural production, if a model does not assume lower crop yields when exceeding optimum temperatures, then the long run analysis results can be regarded as unrealistic. To overcome this difficulty, quadratic or much higher-order yield functions must be estimated. Nevertheless, such estimations are difficult because relevant data are

insufficient. Coping with this difficulty of estimating yield functions, the world food model used for this study holds functions for which the relation between temperature and yield is an inverse-U shape (Furuya et al., 2015).

This working report comprises five parts. First, the calculation method of elasticities of supply, input demand, and food demand are explained. Second, the equations and the calculation routine for the supply and demand equilibrium are described. Third, the crop yield function, into which crop model parameters are included, is explained. Fourth, data are used in this model and are presented along with examples of the calculated elasticities. Finally, climate change effects on agricultural production and world markets are described.

Chapter 2. Econometric model for obtaining parameters of food supply and demand

1. Cereal and oil crop sector

(1) Input demand function of crop production

A farmer is assumed to produce four cereals, i.e., rice (*RI*), wheat (*WH*), maize (*MZ*), and other cereals (*XG*) in addition to two oil crops, i.e., soybeans (*SB*) and other oil crops (*XS*). The relevant inputs are land, labor, capital, and fertilizer. Labor and capital are fixed factors in this model.

Short-run profit is found by subtracting labor costs and capital user costs from the variable profit as

$$\pi^S = \pi^V - \sum_i (w_{L,i} X_{L,i} + w_{K,i} X_{K,i}), \quad (1-1)$$

where i is an index of crops including oil crops *RI*, *WH*, *MZ*, *XG*, *SB*, and *XS*.

The variable profit maximization problem is

$$\max. \pi^V = \sum_i p_i Q_i - \sum_i (w_{A,i} X_{A,i} + w_{V,i} X_{V,i}) \quad (1-2)$$

$$\text{s.t. } Q_i = f_{Q,i}(X_{A,i}, X_{V,i}, \overline{X_{L,i}}, \overline{X_{K,i}}) \quad \forall i, \quad (1-3)$$

where π^S represents the short-run profit, π^V stands for the variable profit, p_i and Q_i respectively denote farm prices and production of the six crops, $X_{A,i}$ and $X_{V,i}$ respectively represent the planted area and fertilizer inputs of the six crops, and $\overline{X_{L,i}}$ and $\overline{X_{K,i}}$ respectively denote the labor and capital inputs of the six crops. These are fixed factors. In addition, $w_{A,i}$, $w_{V,i}$, $w_{L,i}$, and $w_{K,i}$ respectively represent land rents, fertilizer prices, wage rates, and capital user costs of the six modes of crop production.

Production functions (1-3) are specified as Cobb–Douglas type functions, as shown below.

$$Q_i = \alpha_{0i} X_{A,i}^{\alpha_{A,i}} X_{V,i}^{\alpha_{V,i}} \overline{X_{L,i}}^{-\alpha_{L,i}} \overline{X_{K,i}}^{-\alpha_{K,i}} \quad \forall i \quad (1-4)$$

Solving the maximization problem with these constraints, the following Lagrangian function is set.

$$L = \sum_i p_i Q_i - \sum_i (w_{A,i} X_{A,i} + w_{V,i} X_{V,i}) + \sum_i \lambda_i \left(Q_i - \alpha_{0i} X_{A,i}^{\alpha_{A,i}} X_{V,i}^{\alpha_{V,i}} \overline{X_{L,i}}^{-\alpha_{L,i}} \overline{X_{K,i}}^{-\alpha_{K,i}} \right) \quad (1-5)$$

The first-order conditions of the function (1-5) for productions and inputs are given as shown below.

$$\frac{\partial L}{\partial Q_i} = p_i + \lambda_i = 0 \Rightarrow \lambda_i = -p_i \quad \forall i \quad (1-6)$$

$$\frac{\partial L}{\partial X_{A,i}} = -w_{A,i}$$

$$-\lambda_i \alpha_{0i} \alpha_{A,i} X_{A,i}^{\alpha_{A,i}-1} X_{V,i}^{\alpha_{V,i}} \overline{X_{L,i}}^{-\alpha_{L,i}} \overline{X_{K,i}}^{-\alpha_{K,i}} = 0 \quad \forall i \quad (1-7)$$

$$\frac{\partial L}{\partial X_{V,i}} = -w_{V,i}$$

$$-\lambda_i \alpha_{0i} \alpha_{V,i} X_{A,i}^{\alpha_{A,i}} X_{V,i}^{\alpha_{V,i}-1} \overline{X_{L,i}}^{-\alpha_{L,i}} \overline{X_{K,i}}^{-\alpha_{K,i}} = 0 \quad \forall i \quad (1-8)$$

Substituting equations (1-6) into equations (1-7) and (1-8) gives the following equations.

$$p_i \alpha_{0i} \alpha_{A,i} X_{A,i}^{\alpha_{A,i}-1} X_{V,i}^{\alpha_{V,i}} \overline{X_{L,i}}^{-\alpha_{L,i}} \overline{X_{K,i}}^{-\alpha_{K,i}} = w_{A,i} \quad \forall i \quad (1-9)$$

$$p_i \alpha_{0i} \alpha_{V,i} X_{A,i}^{\alpha_{A,i}} X_{V,i}^{\alpha_{V,i}-1} \overline{X_{L,i}}^{-\alpha_{L,i}} \overline{X_{K,i}}^{-\alpha_{K,i}} = w_{V,i} \quad \forall i \quad (1-10)$$

Taking the natural logarithm of each side of equations (1-9) and (1-10) yields the following equations as

$$A_i + \ln \alpha_{A,i} + (\alpha_{A,i} - 1) \ln \overline{X_{L,i}} + \alpha_{V,i} \ln \overline{X_{K,i}} = \ln w_{A,i} \quad \forall i \quad (1-11)$$

$$A_i + \ln \alpha_{V,i} + \alpha_{A,i} \ln \overline{X_{L,i}} + (\alpha_{V,i} - 1) \ln \overline{X_{K,i}} = \ln w_{V,i} \quad \forall i \quad (1-12)$$

where

$$A_i = \ln p_i + \ln \alpha_{0i} + \alpha_{L,i} \ln \overline{X_{L,i}} + \alpha_{K,i} \ln \overline{X_{K,i}}, \quad \forall i \quad (1-13)$$

After solving equations (1-11) and (1-12) for $\ln X_{A,i}$ and $\ln X_{V,i}$, one can multiply each side of equation (1-11) by $(\alpha_{V,i} - 1)$ as

$$(\alpha_{V,i} - 1) A_i + (\alpha_{V,i} - 1) \ln \alpha_{V,i} + (\alpha_{V,i} - 1) (\alpha_{A,i} - 1) \ln \overline{X_{L,i}} + \alpha_{V,i} (\alpha_{V,i} - 1) \ln \overline{X_{K,i}} = (\alpha_{V,i} - 1) \ln w_{A,i} \quad (1-14)$$

Then, multiplying each side of equation (1-12) by $\alpha_{V,i}$,

$$\alpha_{V,i} A_i + \alpha_{V,i} \ln \alpha_{V,i} + \alpha_{V,i} \alpha_{A,i} \ln \overline{X_{L,i}} + \alpha_{V,i} (\alpha_{V,i} - 1) \ln \overline{X_{K,i}} = \alpha_{V,i} \ln w_{V,i}. \quad (1-15)$$

Subtracting equation (1-15) from (1-14), $\ln X_{A,i}$ is obtained:

$$\begin{aligned} & -A_i + (\alpha_{V,i} - 1) \ln \alpha_{A,i} - \alpha_{V,i} \ln \alpha_{V,i} \\ & + (\alpha_{V,i} - 1) (\alpha_{A,i} - 1) \ln \overline{X_{L,i}} - \alpha_{V,i} \alpha_{A,i} \ln \overline{X_{L,i}} \\ & = (\alpha_{V,i} - 1) \ln w_{A,i} - \alpha_{V,i} \ln w_{V,i} \\ & -A_i + (\alpha_{V,i} - 1) \ln \alpha_{A,i} - \alpha_{V,i} \ln \alpha_{V,i} \\ & + (-\alpha_{V,i} - \alpha_{A,i} + 1) \ln \overline{X_{L,i}} \\ & = (\alpha_{V,i} - 1) \ln w_{A,i} - \alpha_{V,i} \ln w_{V,i} \\ & (1 - \alpha_{V,i} - \alpha_{A,i}) \ln \overline{X_{L,i}} \\ & = A_i - (\alpha_{V,i} - 1) \ln \alpha_{A,i} + \alpha_{V,i} \ln \alpha_{V,i} \\ & + (\alpha_{V,i} - 1) \ln w_{A,i} - \alpha_{V,i} \ln w_{V,i} \end{aligned}$$

$$\ln X_{A,i} = \frac{A_i + (1 - \alpha_{V,i}) \ln \alpha_{A,i} + \alpha_{V,i} \ln \alpha_{V,i}}{1 - \alpha_{V,i} - \alpha_{A,i}} \\ \times \frac{-(1 - \alpha_{V,i}) \ln w_{A,i} - \alpha_{V,i} \ln w_{V,i}}{1 - \alpha_{V,i} - \alpha_{A,i}} \quad (1-16)$$

Multiplying each side of equation (1-11) by $\alpha_{A,i}$, one obtains

$$\alpha_{A,i} A_i + \alpha_{A,i} \ln \alpha_{A,i} + \alpha_{A,i} (\alpha_{A,i} - 1) \ln X_{A,i} \\ + \alpha_{A,i} \alpha_{V,i} \ln X_{V,i} = \alpha_{A,i} \ln w_{A,i} \quad (1-17)$$

In addition, multiplying each side of equation (1-12) by $(\alpha_{A,i} - 1)$ gives the following expression.

$$(\alpha_{A,i} - 1) A_i + (\alpha_{A,i} - 1) \ln \alpha_{V,i} \\ + \alpha_{A,i} (\alpha_{A,i} - 1) \ln X_{A,i} + (\alpha_{A,i} - 1) (\alpha_{V,i} - 1) \ln X_{V,i} \\ = (\alpha_{A,i} - 1) \ln w_{V,i} \quad (1-18)$$

By subtracting equation (1-17) from (1-18), $\ln X_{V,i}$ is obtained.

$$-A_i - \alpha_{A,i} \ln \alpha_{A,i} + (\alpha_{A,i} - 1) \ln \alpha_{V,i} \\ + (\alpha_{A,i} - 1) (\alpha_{V,i} - 1) \ln X_{V,i} - \alpha_{A,i} \alpha_{V,i} \ln X_{V,i} \\ = -\alpha_{A,i} \ln w_{A,i} + (\alpha_{A,i} - 1) \ln w_{V,i} \\ - A_i - \alpha_{A,i} \ln \alpha_{A,i} + (\alpha_{A,i} - 1) \ln \alpha_{V,i} \\ + (-\alpha_{A,i} - \alpha_{V,i} + 1) \ln X_{V,i} \\ = -\alpha_{A,i} \ln w_{A,i} + (\alpha_{A,i} - 1) \ln w_{V,i} \\ (1 - \alpha_{A,i} - \alpha_{V,i}) \ln X_{V,i} \\ = A_i + \alpha_{A,i} \ln \alpha_{A,i} - (\alpha_{A,i} - 1) \ln \alpha_{V,i} \\ - \alpha_{A,i} \ln w_{A,i} + (\alpha_{A,i} - 1) \ln w_{V,i} \\ \ln X_{V,i} = \frac{A_i + \alpha_{A,i} \ln \alpha_{A,i} + (1 - \alpha_{A,i}) \ln \alpha_{V,i}}{1 - \alpha_{A,i} - \alpha_{V,i}}$$

$$\times \frac{-\alpha_{A,i} \ln w_{A,i} - (1 - \alpha_{A,i}) \ln w_{V,i}}{1 - \alpha_{A,i} - \alpha_{V,i}} \quad (1-19)$$

Parameters of equations (1-16) and (1-19) can be replaced with the following parameters.

$$\ln \beta_{0A,i} = \frac{\ln \alpha_{0i} + (1 - \alpha_{V,i}) \ln \alpha_{A,i} + \alpha_{V,i} \ln \alpha_{V,i}}{1 - \alpha_{A,i} - \alpha_{V,i}} \quad (1-20)$$

$$\ln \beta_{0V,i} = \frac{\ln \alpha_{0i} + \alpha_{A,i} \ln \alpha_{A,i} + (1 - \alpha_{A,i}) \ln \alpha_{V,i}}{1 - \alpha_{A,i} - \alpha_{V,i}} \quad (1-21)$$

Then, the following input demand functions of land and fertilizer are obtained after substituting parameters (1-20) and (1-21) and equation (1-13) into equations (1-16) and (1-19).

$$\ln X_{A,i} = \ln \beta_{0A,i} + \frac{1}{1 - \alpha_{A,i} - \alpha_{V,i}} \ln p_i$$

$$- \frac{1 - \alpha_{V,i}}{1 - \alpha_{A,i} - \alpha_{V,i}} \ln w_{A,i} - \frac{\alpha_{V,i}}{1 - \alpha_{A,i} - \alpha_{V,i}} \ln w_{V,i} \\ + \frac{\alpha_{L,i}}{1 - \alpha_{A,i} - \alpha_{V,i}} \ln \bar{X}_{L,i} + \frac{\alpha_{K,i}}{1 - \alpha_{A,i} - \alpha_{V,i}} \ln \bar{X}_{K,i} \quad (1-22)$$

$$\ln X_{V,i} = \ln \beta_{0V,i} + \frac{1}{1 - \alpha_{A,i} - \alpha_{V,i}} \ln p_i \\ - \frac{\alpha_{A,i}}{1 - \alpha_{A,i} - \alpha_{V,i}} \ln w_{A,i} - \frac{1 - \alpha_{A,i}}{1 - \alpha_{A,i} - \alpha_{V,i}} \ln w_{V,i} \\ + \frac{\alpha_{L,i}}{1 - \alpha_{A,i} - \alpha_{V,i}} \ln \bar{X}_{L,i} + \frac{\alpha_{K,i}}{1 - \alpha_{A,i} - \alpha_{V,i}} \ln \bar{X}_{K,i} \quad (1-23)$$

The input demand functions of land and fertilizer for rice, wheat, maize, other cereals, soybeans, and other oil crops are functions in which suffixes of functions (1-22) and (1-23) are replaced with *RI*, *WH*, *MZ*, *XG*, *SB*, and *XS*.

Substituting production functions (1-4) into equations (1-9) and (1-10), respectively, gives the following parameters of production functions.

$$\alpha_{A,i} = \frac{w_{A,i} X_{A,i}}{p_i Q_i}, \quad \alpha_{V,i} = \frac{w_{V,i} X_{V,i}}{p_i Q_i} \quad \forall i \quad (1-24)$$

The parameters of input demand functions (1-22) and (1-23) are calculated from these parameters of production functions. However, the parameters of labor and capital, which are fixed factors, are not obtained through this procedure.

(2) Supply function of crops

The supply function is obtained by substituting input demand functions into the production function. The production function produced by taking the logarithm of the Cobb–Douglas short-run production function (1-4) is the following.

$$\ln Q_i = \ln \alpha_{0i} + \alpha_{A,i} \ln X_{A,i} + \alpha_{V,i} \ln X_{V,i} \\ + \alpha_{L,i} \ln \bar{X}_{L,i} + \alpha_{K,i} \ln \bar{X}_{K,i} \quad (1-25)$$

Substituting the input demand function of land (1-22) and that of fertilizer (1-23) into (1-25) yields the equation presented below.

$$\ln Q_i = \ln \alpha_{0i}$$

$$\begin{aligned}
 & +\alpha_{A,i} \left(\ln \beta_{0A,i} + \frac{1}{1-\alpha_{A,i}-\alpha_{V,i}} \ln p_i \right. \\
 & \quad \left. - \frac{1-\alpha_{V,i}}{1-\alpha_{A,i}-\alpha_{V,i}} \ln w_{A,i} - \frac{\alpha_{V,i}}{1-\alpha_{A,i}-\alpha_{V,i}} \ln w_{V,i} \right. \\
 & \quad \left. + \frac{\alpha_{L,i}}{1-\alpha_{A,i}-\alpha_{V,i}} \ln \overline{X_{L,i}} + \frac{\alpha_{K,i}}{1-\alpha_{A,i}-\alpha_{V,i}} \ln \overline{X_{K,i}} \right) \\
 & +\alpha_{V,i} \left(\ln \beta_{0V,i} + \frac{1}{1-\alpha_{A,i}-\alpha_{V,i}} \ln p_i \right. \\
 & \quad \left. - \frac{\alpha_{A,i}}{1-\alpha_{A,i}-\alpha_{V,i}} \ln w_{A,i} - \frac{1-\alpha_{A,i}}{1-\alpha_{A,i}-\alpha_{V,i}} \ln w_{V,i} \right. \\
 & \quad \left. + \frac{\alpha_{L,i}}{1-\alpha_{A,i}-\alpha_{V,i}} \ln \overline{X_{L,i}} + \frac{\alpha_{K,i}}{1-\alpha_{A,i}-\alpha_{V,i}} \ln \overline{X_{K,i}} \right) \\
 & +\alpha_{L,i} \ln \overline{X_{L,i}} + \alpha_{K,i} \ln \overline{X_{K,i}} \\
 & = \ln \alpha_{0,i} + \alpha_{A,i} \ln \beta_{0A,i} + \frac{\alpha_{A,i}}{1-\alpha_{A,i}-\alpha_{V,i}} \ln p_i \\
 & \quad - \frac{\alpha_{A,i}(1-\alpha_{V,i})}{1-\alpha_{A,i}-\alpha_{V,i}} \ln w_{A,i} - \frac{\alpha_{A,i}\alpha_{V,i}}{1-\alpha_{A,i}-\alpha_{V,i}} \ln w_{V,i} \\
 & \quad + \frac{\alpha_{A,i}\alpha_{L,i}}{1-\alpha_{A,i}-\alpha_{V,i}} \ln \overline{X_{L,i}} + \frac{\alpha_{A,i}\alpha_{K,i}}{1-\alpha_{A,i}-\alpha_{V,i}} \ln \overline{X_{K,i}} \\
 & +\alpha_{V,i} \ln \beta_{0V,i} + \frac{\alpha_{V,i}}{1-\alpha_{A,i}-\alpha_{V,i}} \ln p_i \\
 & \quad - \frac{\alpha_{V,i}\alpha_{A,i}}{1-\alpha_{A,i}-\alpha_{V,i}} \ln w_{A,i} - \frac{\alpha_{V,i}(1-\alpha_{A,i})}{1-\alpha_{A,i}-\alpha_{V,i}} \ln w_{V,i} \\
 & \quad + \frac{\alpha_{V,i}\alpha_{L,i}}{1-\alpha_{A,i}-\alpha_{V,i}} \ln \overline{X_{L,i}} + \frac{\alpha_{V,i}\alpha_{K,i}}{1-\alpha_{A,i}-\alpha_{V,i}} \ln \overline{X_{K,i}} \\
 & +\alpha_{L,i} \ln \overline{X_{L,i}} + \alpha_{K,i} \ln \overline{X_{K,i}} \\
 & = \ln \alpha_{0i} + \alpha_{A,i} \ln \beta_{0A,i} + \alpha_{V,i} \ln \beta_{0V,i} \\
 & \quad + \frac{\alpha_{A,i} + \alpha_{V,i}}{1-\alpha_{A,i}-\alpha_{V,i}} \ln p_i \\
 & \quad - \frac{\alpha_{A,i}}{1-(\alpha_{A,i} + \alpha_{V,i})} \ln w_{A,i} - \frac{\alpha_{V,i}}{1-(\alpha_{A,i} + \alpha_{V,i})} \ln w_{V,i} \\
 & \quad + \frac{\alpha_{L,i}}{1-(\alpha_{A,i} + \alpha_{V,i})} \ln \overline{X_{L,i}} + \frac{\alpha_{K,i}}{1-(\alpha_{A,i} + \alpha_{V,i})} \ln \overline{X_{K,i}} \\
 & \quad + \left[\alpha_{L,i} + \frac{\alpha_{A,i}\alpha_{L,i} + \alpha_{V,i}\alpha_{L,i}}{1-\alpha_{A,i}-\alpha_{V,i}} \right] \ln \overline{X_{L,i}} \\
 & \quad + \left[\alpha_{K,i} + \frac{\alpha_{A,i}\alpha_{K,i} + \alpha_{V,i}\alpha_{K,i}}{1-\alpha_{A,i}-\alpha_{V,i}} \right] \ln \overline{X_{K,i}} \\
 & = \ln \alpha_{0,i} + \alpha_{A,i} \ln \beta_{0A,i} + \alpha_{V,i} \ln \beta_{0V,i} \\
 & \quad + \frac{\alpha_{A,i} + \alpha_{V,i}}{1-(\alpha_{A,i} + \alpha_{V,i})} \ln p_i \\
 & \quad - \frac{\alpha_{A,i}}{1-(\alpha_{A,i} + \alpha_{V,i})} \ln w_{A,i} - \frac{\alpha_{V,i}}{1-(\alpha_{A,i} + \alpha_{V,i})} \ln w_{V,i} \\
 & \quad + \frac{\alpha_{L,i}}{1-(\alpha_{A,i} + \alpha_{V,i})} \ln \overline{X_{L,i}} + \frac{\alpha_{K,i}}{1-(\alpha_{A,i} + \alpha_{V,i})} \ln \overline{X_{K,i}} \\
 & \tag{1-26}
 \end{aligned}$$

Equation (1-26) is the supply function of crop i . The supply functions of rice, wheat, maize, other cereals, soybeans, and other oil crops are functions in which suffixes of function (1-26) are replaced with RI , WH , MZ , XG , SB , and XS .

(3) Supply response to changes in prices of other crops

A farmer is assumed to have a plan for planting rice (RI), wheat (WH), maize (MZ), other cereals (XG), soybeans (SB), and other oil crops (XS), respectively, on land areas $X_{A,RI}$, $X_{A,WH}$, $X_{A,MZ}$, $X_{A,XG}$, $X_{A,SB}$, and $X_{A,XS}$. Next, it is assumed that the farmer will expand the planted area of crop j by an amount equal to $\Delta X_{A,j}$. In this case, the elasticities of land demand for the output price of crop j are approximated as

$$\frac{\partial \ln X_{A,j}}{\partial \ln p_i} = \frac{\partial X_{A,j}}{\partial p_i} \frac{p_i}{X_{A,j}} \approx \frac{\Delta X_{A,j}}{\Delta p_i} \frac{p_i}{X_{A,j}} \quad \forall i, j, \tag{1-27}$$

where i is an index of crops such as RI , WH , MZ , XG , SB , and XS .

If the total planted area is constant, then the increase in planted area of crop j , i.e., $\Delta X_{A,j}$ is expected to be equal to the sum of the decrease in planted areas of other crops: $\Delta X_{A,i \neq j}$.

$$\sum_{i \neq j} \Delta X_{A,i} = -\Delta X_{A,j}, \quad \forall j \tag{1-28}$$

Multiplying each side of equation (1-28) by $p_j / \Delta p_j$ gives the equation presented below.

$$\sum_{i \neq j} \frac{\Delta X_{A,i}}{\Delta p_j} \frac{p_j}{X_{A,i}} X_{A,i} = -\frac{\Delta X_{A,j}}{\Delta p_j} \frac{p_j}{X_{A,j}} X_{A,j}, \quad \forall j \tag{1-29}$$

Substituting equation (1-27) into equation (1-29) gives the following equation of the relation of elasticities.

$$\sum_{i \neq j} \frac{\partial \ln X_{A,i}}{\partial \ln p_j} X_{A,i} = - \frac{\partial \ln X_{A,j}}{\partial \ln p_j} X_{A,j}, \quad \forall j \quad (1-30)$$

Therein, j is an index of crops, i.e., RI , WH , MZ , XG , SB , and XS .

The corresponding rate of decrease of the planted area of other crops is assumed to be same if the crop j output price is increased. The following equation presents this relation:

$$\frac{\Delta X_{A,i}}{X_{A,i}} = \frac{\Delta X_{A,k}}{X_{A,k}}, \quad \forall i \neq j, k \neq j, \quad \forall j \quad (1-31)$$

After dividing each side of equation (1-31) by p_j , the equation of elasticities is

$$\frac{\partial \ln X_{A,i}}{\partial \ln p_j} = \frac{\partial \ln X_{A,k}}{\partial \ln p_j}, \quad \forall i \neq j, k \neq j, \quad \forall j. \quad (1-32)$$

Substituting equations (1-32) into equations (1-30) produces the following equations of elasticities.

$$\frac{\partial \ln X_{A,i}}{\partial \ln p_j} = - \frac{\partial \ln X_{A,j}}{\partial \ln p_j} \frac{X_{A,j}}{\sum_{i \neq j} X_{A,i}}, \quad \forall i \neq j, \quad \forall j. \quad (1-33)$$

Using the above relation among elasticities, one can consider the planted area response of crops in the short run. The following two assumptions are used in this model.

- (1) Total planted area is constant in the short run.
- (2) Decreasing rates of planted area of the five crops corresponding to increased planted areas of another crop are equal.

By virtue of these assumptions, elasticities of supply for prices of other crops can be inferred. Elasticities of supply of rice for output prices of wheat, maize, other cereals, soybeans, and other oil crops are acquired from the production function (1-25) and equation (1-33) as

$$\begin{aligned} \frac{\partial \ln Q_i}{\partial \ln p_j} &= \frac{\partial \ln Q_i}{\partial \ln X_{A,i}} \frac{\partial \ln X_{A,i}}{\partial \ln p_j} \\ &= -\alpha_{A,i} \frac{\partial \ln X_{A,j}}{\partial \ln p_j} \frac{X_{A,j}}{X_{A,T} - X_{A,j}}, \quad \forall i \neq j, \quad \forall j, \end{aligned} \quad (1-34)$$

where $X_{A,T} = \sum_i X_{A,i}$.

Land rent, fertilizer price, labor input, and capital input for other crops are expected to affect the planted area of

the crop. Nevertheless, this model does not incorporate these effects because the effects of cross-input prices and input quantities are slight.

(4) Planted area functions of crops

Production is obtained from the following identity.

$$Q_{it} = Y_{it} A_{it} \quad (1-35)$$

In that expression, Q_i represents production, Y_i denotes yield, A_i stands for the harvested area, i is the index of crops, and t denotes that the data are measured at time t .

In this model, the yield function addresses the technological change. The shock of climate change and the planted area function are equivalent to the supply function. This function is based on adaptive expectations, as developed by Nerlove (1956).

The planted area function, i.e., supply function, can be specified as the following linear function.

$$A_{it} = a_i + \sum_j b_{ij} p_{jt}^* + u_{it} \quad (1-36)$$

Therein, A_{it} signifies the planted area, which is equal to the harvested area in this model. In addition, j is a crop index for the six grains and oil crops, p_{jt}^* represents the expected price of crop j , and u_{it} is an error component.

Adaptive expectation relies on the assumption that the update of the expectation responses to the previous error is

$$p_{jt}^* - p_{j,t-1}^* = (1 - \lambda)(p_{j,t-1} - p_{j,t-1}^*). \quad (1-37)$$

This equation can be rewritten as

$$p_{jt}^* - \lambda p_{j,t-1}^* = (1 - \lambda) p_{j,t-1}. \quad (1-38)$$

Then, by multiplying λ to the one-year-lagged function of (1-36), one obtains the following function.

$$\lambda A_{it-1} = \lambda a_i + \sum_j \lambda b_{ij} p_{j,t-1}^* + \lambda u_{it-1} \quad (1-39)$$

Subtracting function (1-39) from function (1-36) yields the following function.

$$\begin{aligned} A_{it} - \lambda A_{it-1} &= a_i - a_i \lambda \\ &+ \sum_j b_{ij} (p_{jt}^* - \lambda p_{j,t-1}^*) + u_{it} - \lambda u_{it-1} \end{aligned} \quad (1-40)$$

In addition, substituting equation (1-38) into equation (1-40) yields the equation presented below.

$$\begin{aligned} A_{it} &= a(1 - \lambda) + \lambda A_{it-1} \\ &+ \sum_j b_{ij} (1 - \lambda) p_{j,t-1} + u_{it} - \lambda u_{it-1} \end{aligned} \quad (1-41)$$

Therefore, the explanatory variables of the planted area function are the planted area of the prior year and prices of grains and oil crops prices of the prior year.

The planted area function in this model is specified based on linear function (1-41). Parameter $b_{ij}(1 - \lambda)$ is calculated from the elasticities, which were presented in earlier sections. These are changed to slopes using the average numbers in the initial year:

$$\frac{\partial A_{it}}{\partial p_{jt-1}} = \frac{\partial \ln A_{it}}{\partial \ln p_{jt-1}} \frac{A_{itBase}}{p_{jtBase}}$$

The parameters of the prior year, i.e., λ , are assigned 0.8 as default values following those of the IFPSIM.

The planted area is assumed to be unaffected by climate variables because the forecasted values of rainfall in each country of the MIROC5 are not so varied by 2060.

(5) Summary of elasticities

Table 2-1-1 presents elasticities of supply for output prices of rice, wheat, maize, other cereals, soybeans, and other

oil crops. Supply function (1-26), input demand functions (1-22) and (1-23), and cross price elasticities (1-34) are used to compile this table. Table 2-1-2 presents elasticities of supply for prices of variable inputs and for quantities of fixed inputs.

Tables 2-1-3 – 2-1-5 show elasticities of input demand. Elasticities of variable input demand in the short run are exhibited in Table 2-1-3. The variable inputs are land and fertilizer. Elasticities of conditional and normal fixed input demand in the long run are shown respectively in Tables 2-1-4 and 2-1-5. The fixed inputs are labor and capital.

Table 2-1-1. Elasticities of supply for output prices in the short run.

		Producer price	
		Rice (RI)	Wheat (WH)
Supply	RI	$\frac{\alpha_{A,RI} + \alpha_{V,RI}}{1 - (\alpha_{A,RI} + \alpha_{V,RI})}$	$\frac{-\alpha_{A,RI}}{1 - (\alpha_{A,WH} + \alpha_{V,WH})} \frac{X_{A,WH}}{X_{A,T} - X_{A,WH}}$
	WH	$\frac{-\alpha_{A,WH}}{1 - (\alpha_{A,RI} + \alpha_{V,RI})} \frac{X_{A,RI}}{X_{A,T} - X_{A,RI}}$	$\frac{\alpha_{A,WH} + \alpha_{V,WH}}{1 - (\alpha_{A,WH} + \alpha_{V,WH})}$
	MZ	$\frac{-\alpha_{A,MZ}}{1 - (\alpha_{A,RI} + \alpha_{V,RI})} \frac{X_{A,RI}}{X_{A,T} - X_{A,RI}}$	$\frac{-\alpha_{A,MZ}}{1 - (\alpha_{A,WH} + \alpha_{V,WH})} \frac{X_{A,WH}}{X_{A,T} - X_{A,WH}}$
	XG	$\frac{-\alpha_{A,XG}}{1 - (\alpha_{A,RI} + \alpha_{V,RI})} \frac{X_{A,RI}}{X_{A,T} - X_{A,RI}}$	$\frac{-\alpha_{A,XG}}{1 - (\alpha_{A,WH} + \alpha_{V,WH})} \frac{X_{A,WH}}{X_{A,T} - X_{A,WH}}$
	SB	$\frac{-\alpha_{A,SB}}{1 - (\alpha_{A,RI} + \alpha_{V,RI})} \frac{X_{A,RI}}{X_{A,T} - X_{A,RI}}$	$\frac{-\alpha_{A,SB}}{1 - (\alpha_{A,WH} + \alpha_{V,WH})} \frac{X_{A,WH}}{X_{A,T} - X_{A,WH}}$
	XS	$\frac{-\alpha_{A,XS}}{1 - (\alpha_{A,RI} + \alpha_{V,RI})} \frac{X_{A,RI}}{X_{A,T} - X_{A,RI}}$	$\frac{-\alpha_{A,XS}}{1 - (\alpha_{A,WH} + \alpha_{V,WH})} \frac{X_{A,WH}}{X_{A,T} - X_{A,WH}}$

Table 2-1-1. Elasticities of supply for output prices in the short run (continued).

		Producer price	
		Maize (MZ)	Other cereals (XG)
Supply	RI	$\frac{-\alpha_{A,RI}}{1 - (\alpha_{A,MZ} + \alpha_{V,MZ})} \frac{X_{A,MZ}}{X_{A,T} - X_{A,MZ}}$	$\frac{-\alpha_{A,RI}}{1 - (\alpha_{A,XG} + \alpha_{V,XG})} \frac{X_{A,XG}}{X_{A,T} - X_{A,XG}}$
	WH	$\frac{-\alpha_{A,WH}}{1 - (\alpha_{A,MZ} + \alpha_{V,MZ})} \frac{X_{A,MZ}}{X_{A,T} - X_{A,MZ}}$	$\frac{-\alpha_{A,WH}}{1 - (\alpha_{A,XG} + \alpha_{V,XG})} \frac{X_{A,XG}}{X_{A,T} - X_{A,XG}}$
	MZ	$\frac{\alpha_{A,MZ} + \alpha_{V,MZ}}{1 - (\alpha_{A,MZ} + \alpha_{V,MZ})}$	$\frac{-\alpha_{A,MZ}}{1 - (\alpha_{A,XG} + \alpha_{V,XG})} \frac{X_{A,XG}}{X_{A,T} - X_{A,XG}}$
	XG	$\frac{-\alpha_{A,XG}}{1 - (\alpha_{A,MZ} + \alpha_{V,MZ})} \frac{X_{A,MZ}}{X_{A,T} - X_{A,MZ}}$	$\frac{\alpha_{A,XG} + \alpha_{V,XG}}{1 - (\alpha_{A,XG} + \alpha_{V,XG})}$
	SB	$\frac{-\alpha_{A,SB}}{1 - (\alpha_{A,MZ} + \alpha_{V,MZ})} \frac{X_{A,MZ}}{X_{A,T} - X_{A,MZ}}$	$\frac{-\alpha_{A,SB}}{1 - (\alpha_{A,XG} + \alpha_{V,XG})} \frac{X_{A,XG}}{X_{A,T} - X_{A,XG}}$
	XS	$\frac{-\alpha_{A,XS}}{1 - (\alpha_{A,MZ} + \alpha_{V,MZ})} \frac{X_{A,MZ}}{X_{A,T} - X_{A,MZ}}$	$\frac{-\alpha_{A,XS}}{1 - (\alpha_{A,XG} + \alpha_{V,XG})} \frac{X_{A,XG}}{X_{A,T} - X_{A,XG}}$

Table 2-1-1. Elasticities of supply for output prices in the short run (continued).

		Producer price			
		Soybeans (SB)		Other oil crops (XS)	
Supply	RI	$\frac{-\alpha_{A,RI}}{1 - (\alpha_{A,SB} + \alpha_{V,SB})}$	$\frac{X_{A,SB}}{X_{A,T} - X_{A,SB}}$	$\frac{-\alpha_{A,RI}}{1 - (\alpha_{A,XS} + \alpha_{V,XS})}$	$\frac{X_{A,XS}}{X_{A,T} - X_{A,XS}}$
	WH	$\frac{-\alpha_{A,WH}}{1 - (\alpha_{A,SB} + \alpha_{V,SB})}$	$\frac{X_{A,SB}}{X_{A,T} - X_{A,SB}}$	$\frac{-\alpha_{A,WH}}{1 - (\alpha_{A,XS} + \alpha_{V,XS})}$	$\frac{X_{A,XS}}{X_{A,T} - X_{A,XS}}$
	MZ	$\frac{-\alpha_{A,MZ}}{1 - (\alpha_{A,SB} + \alpha_{V,SB})}$	$\frac{X_{A,SB}}{X_{A,T} - X_{A,SB}}$	$\frac{-\alpha_{A,MZ}}{1 - (\alpha_{A,XS} + \alpha_{V,XS})}$	$\frac{X_{A,XS}}{X_{A,T} - X_{A,XS}}$
	XG	$\frac{-\alpha_{A,XG}}{1 - (\alpha_{A,SB} + \alpha_{V,SB})}$	$\frac{X_{A,SB}}{X_{A,T} - X_{A,SB}}$	$\frac{-\alpha_{A,XG}}{1 - (\alpha_{A,XS} + \alpha_{V,XS})}$	$\frac{X_{A,XS}}{X_{A,T} - X_{A,XS}}$
	SB	$\frac{\alpha_{A,SB} + \alpha_{V,SB}}{1 - (\alpha_{A,SB} + \alpha_{V,SB})}$		$\frac{-\alpha_{A,SB}}{1 - (\alpha_{A,XS} + \alpha_{V,XS})}$	$\frac{X_{A,XS}}{X_{A,T} - X_{A,XS}}$
	XS	$\frac{-\alpha_{A,XS}}{1 - (\alpha_{A,SB} + \alpha_{V,SB})}$	$\frac{X_{A,SB}}{X_{A,T} - X_{A,SB}}$	$\frac{\alpha_{A,XS} + \alpha_{V,XS}}{1 - (\alpha_{A,XS} + \alpha_{V,XS})}$	

Note: $X_{A,T} = X_{A,RI} + X_{A,WH} + X_{A,MZ} + X_{A,XG} + X_{A,SB} + X_{A,XS}$

Table 2-1-2. Elasticities of supply for input prices and fixed inputs.

	Input price		Labor input	Capital input
	Land	Fertilizer		
Supply of crop i	$\frac{-\alpha_{A,i}}{1 - (\alpha_{A,i} + \alpha_{V,i})}$	$\frac{-\alpha_{V,i}}{1 - (\alpha_{A,i} + \alpha_{V,i})}$	$\frac{\alpha_{L,i}}{1 - (\alpha_{A,i} + \alpha_{V,i})}$	$\frac{\alpha_{K,i}}{1 - (\alpha_{A,i} + \alpha_{V,i})}$

Note: i : index of crops: RI, WH, MZ, XG, SB , and XS .

Table 2-1-3. Elasticities of land and fertilizer input demand in the short run.

	Output price	Input price		Labor input	Capital input
		Land	Fertilizer		
Land input of crop i	$\frac{1}{1 - (\alpha_{A,i} + \alpha_{V,i})}$	$\frac{1 - \alpha_{V,i}}{1 - (\alpha_{A,i} + \alpha_{V,i})}$	$\frac{-\alpha_{V,i}}{1 - (\alpha_{A,i} + \alpha_{V,i})}$	$\frac{\alpha_{L,i}}{1 - (\alpha_{A,i} + \alpha_{V,i})}$	$\frac{\alpha_{K,i}}{1 - (\alpha_{A,i} + \alpha_{V,i})}$
Fertilizer input of crop i	$\frac{1}{1 - (\alpha_{A,i} + \alpha_{V,i})}$	$\frac{-\alpha_{A,i}}{1 - (\alpha_{A,i} + \alpha_{V,i})}$	$\frac{1 - \alpha_{A,i}}{1 - (\alpha_{A,i} + \alpha_{V,i})}$	$\frac{\alpha_{L,i}}{1 - (\alpha_{A,i} + \alpha_{V,i})}$	$\frac{\alpha_{K,i}}{1 - (\alpha_{A,i} + \alpha_{V,i})}$

Note: i : index of crops RI, WH, MZ, XG, SB , and XS .

Table 2-1-4. Elasticity of conditional labor and capital input demand in the long run.

	Output	Input price			
		Land	Fertilizer	Labor	Capital
Labor input of crop i	$\frac{1}{\eta_i}$	$\frac{\alpha_{A,i}}{\eta_i}$	$\frac{\alpha_{V,i}}{\eta_i}$	$-\left(1 - \frac{\alpha_{L,i}}{\eta_i}\right)$	$\frac{\alpha_{K,i}}{\eta_i}$
Capital input of crop i	$\frac{1}{\eta_i}$	$\frac{\alpha_{A,i}}{\eta_i}$	$\frac{\alpha_{V,i}}{\eta_i}$	$\frac{\alpha_{L,i}}{\eta_i}$	$-\left(1 - \frac{\alpha_{K,i}}{\eta_i}\right)$

Note: i : index of crops RI, WH, MZ, XG, SB , and XS .

$$\eta_i = \alpha_{A,i} + \alpha_{L,i} + \alpha_{K,i} + \alpha_{V,i}$$

Table 2-1-5. Elasticity of labor and capital input demand in the long run.

	Output price	Input price			
		Land	Fertilizer	Labor	Capital
Labor input of crop i	$\frac{1}{1-\eta_i}$	$\frac{\alpha_{A_i}}{1-\eta_i}$	$\frac{\alpha_{V_i}}{1-\eta_i}$	$-\left(1+\frac{\alpha_{L_i}}{1-\eta_i}\right)$	$\frac{\alpha_{K_i}}{1-\eta_i}$
Capital input of crop i	$\frac{1}{1-\eta_i}$	$\frac{\alpha_{A_i}}{1-\eta_i}$	$\frac{\alpha_{V_i}}{1-\eta_i}$	$\frac{\alpha_{L_i}}{1-\eta_i}$	$-\left(1+\frac{\alpha_{K_i}}{1-\eta_i}\right)$

Note: i : index of crops RI, WH, MZ, XG, SB , and XS .

$$\eta_i = \alpha_{A_i} + \alpha_{L_i} + \alpha_{K_i} + \alpha_{V_i}$$

2. Meat, eggs, and milk products sector

(1) Feed input demand function of production of meats, eggs, and milk

A farmer is assumed to produce seven livestock products: beef (BF), sheep (SH), pork (PK), poultry (PM), other meats (XM), eggs (EG), and raw milk (MK). For that production, the inputs are rice for feed (RI , livestock), wheat for feed (WH , livestock), maize for feed (MZ , livestock), other grains for feed (XG , livestock), soybeans for feed (SB , livestock), other oil crops for feed (XS , livestock), soybean cake (CS , livestock), cake of other oil crops (CX , livestock), but also land (A), labor (L), and capital (K). In this model, land, labor, and capital are fixed factors.

The short-run profit is obtained by subtracting land rent, labor costs, and capital user costs from the variable profit as

$$\begin{aligned} \pi^S = \pi^V - \sum_i w_{A,i} X_{A,i} - \sum_i w_{L,i} X_{L,i} \\ - \sum_i w_{K,i} X_{K,i} \end{aligned} \quad (2-1)$$

where i denotes BF, SH, PK, PM, XM, EG , and MK , $w_{A,i}$ represents the land rent, $w_{L,i}$ stands for the wage rate, $w_{K,i}$ denotes capital user cost, $X_{A,i}$ denotes the land area, $X_{L,i}$ expresses labor input, $X_{K,i}$ signifies capital input, π^S is the short-run profit, and π^V is the variable profit.

The variable profit maximization problem is

$$\max. \pi^V = \sum_i p_i Q_i - \sum_i \sum_j p_j X_{j,i}, \quad (2-2)$$

$$\text{s.t. } Q_i = f_{Q_i}(X_{RI,i}, X_{WH,i}, X_{MZ,i}, X_{XG,i},$$

$$X_{SB,i}, X_{XS,i}, X_{CS,i}, X_{CX,i}, \overline{X_{A,i}}, \overline{X_{L,i}}, \overline{X_{K,i}}), \forall i$$

$$(2-3)$$

where j can be $RI, WH, MZ, XG, SB, XS, CS$, or CX , and where p_i and Q_i denote farm prices and farm production quantities of the seven livestock products. In addition, $X_{RI,i}, X_{WH,i}, X_{MZ,i}, X_{XG,i}, X_{SB,i}, X_{XS,i}, X_{CS,i}$, and $X_{CX,i}$ respectively stand for feed inputs of the seven livestock products. Also, $\overline{X_{A,i}}, \overline{X_{L,i}}$, and $\overline{X_{K,i}}$ respectively denote land, labor, and capital inputs of the seven

livestock products. These are fixed factors.

The production functions (2-3) are specified as the Cobb–Douglas type function as

$$Q_i = \alpha_{0i} \prod_j X_{j,i}^{\alpha_{j,i}} \overline{X_{A,i}}^{\alpha_{A,i}} \overline{X_{L,i}}^{\alpha_{L,i}} \overline{X_{K,i}}^{\alpha_{K,i}} \quad \forall i, \quad (2-4)$$

where i can represent BF, SH, PK, PM, XM, EG , or MK . In addition, j can denote $RI, WH, MZ, XG, SB, XS, CS$, or CX .

Solving the maximization problem with these constraints, the following Lagrangian function is set.

$$\begin{aligned} L = \sum_i p_i Q_i - \sum_i \sum_j p_j X_{j,i} \\ + \lambda_i \left(Q_i - \alpha_{0i} \prod_j X_{j,i}^{\alpha_{j,i}} \overline{X_{A,i}}^{\alpha_{A,i}} \overline{X_{L,i}}^{\alpha_{L,i}} \overline{X_{K,i}}^{\alpha_{K,i}} \right) \end{aligned} \quad (2-5)$$

In that equation, i can be BF, SH, PK, PM, XM, EG , or MK . The first-order conditions of function (2-5) for production and inputs are

$$\frac{\partial L}{\partial Q_i} = p_i + \lambda_i = 0 \Rightarrow \lambda_i = -p_i, \quad \forall i, \quad (2-6)$$

where i can be BF, SH, PK, PM, XM, EG , or MK .

$$\frac{\partial L}{\partial X_{j,i}} = -p_j$$

$$\begin{aligned} -\lambda_i \alpha_{0i} \alpha_{j,i} \prod_j X_{j,i}^{\alpha_{j,i}-1} \overline{X_{A,i}}^{\alpha_{A,i}} \overline{X_{L,i}}^{\alpha_{L,i}} \overline{X_{K,i}}^{\alpha_{K,i}} \\ = 0, \quad \forall j, i \end{aligned} \quad (2-7)$$

In that equation, i is BF, SH, PK, PM, XM, EG , or MK ; j can be $RI, WH, MZ, XG, SB, XS, CS$, or CX .

Substituting (2-6) into (2-7) produces the following equation.

$$\begin{aligned} p_i \alpha_{0i} \alpha_{j,i} \prod_j X_{j,i}^{\alpha_{j,i}} X_{j,i}^{-1} \overline{X_{A,i}}^{\alpha_{A,i}} \overline{X_{L,i}}^{\alpha_{L,i}} \overline{X_{K,i}}^{\alpha_{K,i}} \\ = p_j \end{aligned} \quad (2-8)$$

Taking the logarithm of (2-8) and solving for each crop in the same manner as that used for the crop sector yields the

input demand functions for feed. The feed input demand function of j^{th} crop for i^{th} livestock production is

$$\begin{aligned} \ln X_{j,i} &= \ln \beta_{0,j,i} + \frac{1}{1-\beta_i} \ln p_i \\ &- \left(1 + \frac{\alpha_{j,i}}{1-\beta_i} \right) \ln p_j - \sum_{k \neq j} \frac{\alpha_{k,i}}{1-\beta_i} \ln p_k \\ &+ \frac{\alpha_{A,i}}{1-\beta_i} \ln \overline{X_{A,i}} + \frac{\alpha_{L,i}}{1-\beta_i} \ln \overline{X_{L,i}} + \frac{\alpha_{K,i}}{1-\beta_i} \ln \overline{X_{K,i}} \end{aligned} \quad (2-9)$$

where $\beta_i = \sum_j \alpha_{j,i}$.

The j^{th} crop and cake input demand function of the i^{th} livestock products is obtained by replacement from j to RI , WH , MZ , XG , SB , XS , CS , or CX and from i to BF , SH , PK , PM , XM , EG , or MK in equation (2-9).

In the official statistics, crop supply for feed is not divided according to the type of livestock production. Therefore, the following aggregated feed input demand function is used in the model.

$$\begin{aligned} \sum_i \ln X_{j,i} &= \sum_i \ln \beta_{0,j,i} + \sum_i \frac{1}{1-\beta_i} \ln p_i \\ &- \sum_i \left[\left(1 + \frac{\alpha_{j,i}}{1-\beta_i} \right) \ln p_j - \sum_{k \neq j} \frac{\alpha_{k,i}}{1-\beta_i} \ln p_k \right] \\ &+ \sum_i \left(\frac{\alpha_{A,i}}{1-\beta_i} \ln \overline{X_{A,i}} + \frac{\alpha_{L,i}}{1-\beta_i} \ln \overline{X_{L,i}} \right. \\ &\left. + \frac{\alpha_{K,i}}{1-\beta_i} \ln \overline{X_{K,i}} \right) \end{aligned} \quad (2-10)$$

(2) Supply function of meats, eggs, and milk

The supply function is obtained by substituting input demand functions into the production function. The production function for which the logarithm is taken for the Cobb–Douglas short-run production function of i^{th} livestock products is

$$\begin{aligned} \ln Q_i &= \ln \alpha_{0i} + \sum_j \alpha_{j,i} \ln X_{j,i} \\ &+ \alpha_{A,i} \ln \overline{X_{A,i}} + \alpha_{L,i} \ln \overline{X_{L,i}} + \alpha_{K,i} \ln \overline{X_{K,i}}, \end{aligned} \quad (2-11)$$

where i can be BF , SH , PK , PM , XM , EG , or MK , and where j can be RI , WH , MZ , XG , SB , XS , CS , or CX . In addition, $X_{j,i}$, $X_{A,i}$, $X_{L,i}$, and $X_{K,i}$ respectively denote feed, land, labor, and capital inputs for livestock product i .

Substituting the input demand functions of feed (2-9) into the production function (2-11) yields the equations

presented below.

$$\begin{aligned} \ln Q_i &= \ln \alpha_{0i} \\ &+ \sum_j \alpha_{j,i} \ln \beta_{0,j,i} + \frac{\sum_j \alpha_{j,i}}{1-\beta_i} \ln p_i \\ &- \sum_j \alpha_{j,i} \left[\left(1 + \frac{\alpha_{j,i}}{1-\beta_i} \right) \ln p_j + \sum_{k \neq j} \frac{\alpha_{k,i}}{1-\beta_i} \ln p_k \right] \\ &+ \sum_j \alpha_{j,i} \left(\frac{\alpha_{A,i}}{1-\beta_i} \ln \overline{X_{A,i}} + \frac{\alpha_{L,i}}{1-\beta_i} \ln \overline{X_{L,i}} \right. \\ &\left. + \frac{\alpha_{K,i}}{1-\beta_i} \ln \overline{X_{K,i}} \right) \\ &+ \alpha_{A,i} \ln \overline{X_{A,i}} + \alpha_{L,i} \ln \overline{X_{L,i}} + \alpha_{K,i} \ln \overline{X_{K,i}} \\ &= \ln \alpha_{0i} + \sum_j \alpha_{j,i} \ln \beta_{0,j,i} + \frac{\beta_i}{1-\beta_i} \ln p_i \\ &- \sum_j \alpha_{j,i} \left[\frac{1 - \sum_{k \neq j} \alpha_{k,i}}{1-\beta_i} \ln p_j + \sum_{k \neq j} \frac{\alpha_{k,i}}{1-\beta_i} \ln p_k \right] \\ &+ \frac{\beta_i \alpha_{A,i}}{1-\beta_i} \ln \overline{X_{A,i}} + \frac{\beta_i \alpha_{L,i}}{1-\beta_i} \ln \overline{X_{L,i}} \\ &+ \frac{\beta_i \alpha_{K,i}}{1-\beta_i} \ln \overline{X_{K,i}} \\ &+ \alpha_{A,i} \ln \overline{X_{A,i}} + \alpha_{L,i} \ln \overline{X_{L,i}} + \alpha_{K,i} \ln \overline{X_{K,i}} \\ &= \ln \alpha_{0i} + \sum_j \alpha_{j,i} \ln \beta_{0,j,i} + \frac{\beta_i}{1-\beta_i} \ln p_i \\ &- \sum_j \frac{\alpha_{j,i}}{1-\beta_i} \ln p_j \\ &+ \frac{\alpha_{A,i}}{1-\beta_i} \ln \overline{X_{A,i}} + \frac{\alpha_{L,i}}{1-\beta_i} \ln \overline{X_{L,i}} \\ &+ \frac{\alpha_{K,i}}{1-\beta_i} \ln \overline{X_{K,i}} \end{aligned} \quad (2-12)$$

In fact, equation (2-12) is the supply function of i^{th} livestock products. The explanatory variables of these supply functions of the livestock products are the output price, prices of crops and cakes, and the fixed factors: land, labor, and capital inputs.

(3) Head function of meats, eggs, and milk

The production is obtained from the following identity,

$$Q_{it} = Y_i H_{it}, \tag{2-13}$$

where Q_i stands for production, Y_i denotes yield, i.e., production per head, H_i is the number of livestock, and i is an index of livestock products: *BF, SH, PK, PM, XM, EG, or MK*.

In this model, the yield function incorporates the technological change. The head function is equivalent to the supply function. This function is based on the adaptive expectations similarly to the grain and oil crop section.

One can specify the planted area function, i.e., the supply function, to the following linear function as

$$H_{it} = a_i + b_i p_{it}^* + \sum_j c_{ij} p_{jt}^* + u_{it}, \tag{2-14}$$

where H_{it} represents the number of head of livestock, i is a livestock index for the seven domestic animals, p_{it}^* signifies the expected price of the animal i , j is a feed index, p_{jt}^* stands for the expected price of the feed j , and u_{it} is an error term.

Adaptive expectation relies on the assumption of the update of expectation responses to the previous error as

$$p_{jt}^* - p_{jt-1}^* = (1 - \lambda)(p_{jt-1} - p_{jt-1}^*). \tag{2-15}$$

This equation can be rewritten as

$$p_{jt}^* - \lambda p_{jt-1}^* = (1 - \lambda) p_{jt-1}. \tag{2-16}$$

Multiplying λ by the one-year-lagged function of (2-14) yields the following function.

$$\lambda H_{it-1} = \lambda a_i + b_i \lambda p_{it-1}^* + \sum_j c_{ij} \lambda p_{jt-1}^*$$

$$+ \lambda u_{it-1} \tag{2-17}$$

Then, subtracting function (2-17) from function (2-14) produces the following function.

$$H_{it} - \lambda H_{it-1} = a_i(1 - \lambda) + b_i(p_{it}^* - \lambda p_{it-1}^*) + \sum_j c_{ij}(p_{jt}^* - \lambda p_{jt-1}^*) + u_{it} - \lambda u_{it-1} \tag{2-18}$$

Substituting equation (2-16) into equation (2-18) produces the following equation.

$$H_{it} = a_i(1 - \lambda) + \lambda H_{it-1} + b_i(1 - \lambda) p_{it-1} + \sum_j c_{ij}(1 - \lambda) p_{jt-1} + u_{it} - \lambda u_{it-1} \tag{2-19}$$

Therefore, the explanatory variables of the head function are the number of head of the prior year, price of the animal of the prior year, grains, and prices of feed of the prior year.

(4) Summary of elasticities

Table 2-2-1 presents elasticities of feed input demand for output prices of the seven products, i.e., beef, sheep, pork, poultry, other meats, eggs, and raw milk and for input price of the six crops and two cakes, i.e., rice, wheat, maize, other cereals, soybeans, other oil crops, soybean cake and other cakes and for the three input quantities.

Table 2-2-2 shows elasticities of supply for input prices of the six crops and cakes. It includes the input quantities of land, labor, and capital.

Table 2-2-1. Elasticities of input demand for livestock production.

	Output price		Input price		
	Products i	Rice	Wheat	Maize	Other grain
RI	$\frac{1}{1 - \beta_i}$	$-1 - \frac{\alpha_{RI,i}}{1 - \beta_i}$	$-\frac{\alpha_{WH,i}}{1 - \beta_i}$	$-\frac{\alpha_{MZ,i}}{1 - \beta_i}$	$-\frac{\alpha_{XG,i}}{1 - \beta_i}$
WH	$\frac{1}{1 - \beta_i}$	$-\frac{\alpha_{RI,i}}{1 - \beta_i}$	$-1 - \frac{\alpha_{WH,i}}{1 - \beta_i}$	$-\frac{\alpha_{MZ,i}}{1 - \beta_i}$	$-\frac{\alpha_{XG,i}}{1 - \beta_i}$
MZ	$\frac{1}{1 - \beta_i}$	$-\frac{\alpha_{RI,i}}{1 - \beta_i}$	$-\frac{\alpha_{WH,i}}{1 - \beta_i}$	$-1 - \frac{\alpha_{MZ,i}}{1 - \beta_i}$	$-\frac{\alpha_{XG,i}}{1 - \beta_i}$
XG	$\frac{1}{1 - \beta_i}$	$-\frac{\alpha_{RI,i}}{1 - \beta_i}$	$-\frac{\alpha_{WH,i}}{1 - \beta_i}$	$-\frac{\alpha_{MZ,i}}{1 - \beta_i}$	$-1 - \frac{\alpha_{XG,i}}{1 - \beta_i}$
SB	$\frac{1}{1 - \beta_i}$	$-\frac{\alpha_{RI,i}}{1 - \beta_i}$	$-\frac{\alpha_{WH,i}}{1 - \beta_i}$	$-\frac{\alpha_{MZ,i}}{1 - \beta_i}$	$-\frac{\alpha_{XG,i}}{1 - \beta_i}$
XS	$\frac{1}{1 - \beta_i}$	$-\frac{\alpha_{RI,i}}{1 - \beta_i}$	$-\frac{\alpha_{WH,i}}{1 - \beta_i}$	$-\frac{\alpha_{MZ,i}}{1 - \beta_i}$	$-\frac{\alpha_{XG,i}}{1 - \beta_i}$
CS	$\frac{1}{1 - \beta_i}$	$-\frac{\alpha_{RI,i}}{1 - \beta_i}$	$-\frac{\alpha_{WH,i}}{1 - \beta_i}$	$-\frac{\alpha_{MZ,i}}{1 - \beta_i}$	$-\frac{\alpha_{XG,i}}{1 - \beta_i}$
CX	$\frac{1}{1 - \beta_i}$	$-\frac{\alpha_{RI,i}}{1 - \beta_i}$	$-\frac{\alpha_{WH,i}}{1 - \beta_i}$	$-\frac{\alpha_{MZ,i}}{1 - \beta_i}$	$-\frac{\alpha_{XG,i}}{1 - \beta_i}$

Note: i , index of livestock products *BF, SH, PK, PM, XM, EG, and XS*.

$\beta_i = \sum_j \alpha_{j,i}$, where j is *RI, WH, MZ, XG, SB, XS, CS, and CX*.

Table 2-2-1. Elasticities of input demand for livestock production (continued).

	Input price			
	Soybeans	Other oil crops	Soybean cake	Other cake
RI	$-\frac{\alpha_{SB,i}}{1-\beta_i}$	$-\frac{\alpha_{XS,i}}{1-\beta_i}$	$-\frac{\alpha_{CS,i}}{1-\beta_i}$	$-\frac{\alpha_{CX,i}}{1-\beta_i}$
WH	$-\frac{\alpha_{SB,i}}{1-\beta_i}$	$-\frac{\alpha_{XS,i}}{1-\beta_i}$	$-\frac{\alpha_{CS,i}}{1-\beta_i}$	$-\frac{\alpha_{CX,i}}{1-\beta_i}$
MZ	$-\frac{\alpha_{SB,i}}{1-\beta_i}$	$-\frac{\alpha_{XS,i}}{1-\beta_i}$	$-\frac{\alpha_{CS,i}}{1-\beta_i}$	$-\frac{\alpha_{CX,i}}{1-\beta_i}$
XG	$-\frac{\alpha_{SB,i}}{1-\beta_i}$	$-\frac{\alpha_{XS,i}}{1-\beta_i}$	$-\frac{\alpha_{CS,i}}{1-\beta_i}$	$-\frac{\alpha_{CX,i}}{1-\beta_i}$
SB	$-1 - \frac{\alpha_{SB,i}}{1-\beta_i}$	$-\frac{\alpha_{XS,i}}{1-\beta_i}$	$-\frac{\alpha_{CS,i}}{1-\beta_i}$	$-\frac{\alpha_{CX,i}}{1-\beta_i}$
XS	$-\frac{\alpha_{SB,i}}{1-\beta_i}$	$-1 - \frac{\alpha_{XS,i}}{1-\beta_i}$	$-\frac{\alpha_{CS,i}}{1-\beta_i}$	$-\frac{\alpha_{CX,i}}{1-\beta_i}$
CS	$-\frac{\alpha_{SB,i}}{1-\beta_i}$	$-\frac{\alpha_{XS,i}}{1-\beta_i}$	$-1 - \frac{\alpha_{CS,i}}{1-\beta_i}$	$-\frac{\alpha_{CX,i}}{1-\beta_i}$
CX	$-\frac{\alpha_{SB,i}}{1-\beta_i}$	$-\frac{\alpha_{XS,i}}{1-\beta_i}$	$-\frac{\alpha_{CS,i}}{1-\beta_i}$	$-1 - \frac{\alpha_{CX,i}}{1-\beta_i}$

Table 2-2-1. Elasticities of input demand for livestock production (continued).

		Input quantity		
		Land	Labor	Capital
Input demand	Crop and cake j	$\frac{\alpha_{A,i}}{1-\beta_i}$	$\frac{\alpha_{L,i}}{1-\beta_i}$	$\frac{\alpha_{K,i}}{1-\beta_i}$

Table 2-2-2. Elasticities of supply for livestock products.

	Output price		Input price			
	Product i	Rice	Wheat	Maize	Other grain	Soybeans
Supply of livestock products i	$\frac{\beta_i}{1-\beta_i}$	$-\frac{\alpha_{RI,i}}{1-\beta_i}$	$-\frac{\alpha_{WH,i}}{1-\beta_i}$	$-\frac{\alpha_{MZ,i}}{1-\beta_i}$	$-\frac{\alpha_{XG,i}}{1-\beta_i}$	$-\frac{\alpha_{SB,i}}{1-\beta_i}$

Note: same as Table 2-2-1

Table 2-2-2. Elasticities of supply for livestock products (continued).

	Input price			Input quantity		
	Other oil crop	Soybean cake	Other cake	Land	Labor	Capital
Supply of livestock products i	$-\frac{\alpha_{XS,i}}{1-\beta_i}$	$-\frac{\alpha_{CS,i}}{1-\beta_i}$	$-\frac{\alpha_{CX,i}}{1-\beta_i}$	$\frac{\alpha_{A,i}}{1-\beta_i}$	$\frac{\alpha_{L,i}}{1-\beta_i}$	$\frac{\alpha_{K,i}}{1-\beta_i}$

3. Vegetable oil and cake sector

(1) Supply function of vegetable oils

A vegetable oil company is assumed to produce oil by investing soybeans or other oil crops, labor, and capital, where the latter two inputs are fixed factors. In this case, the short-run profit of soybean oil production is found by subtracting labor costs and capital user costs from the variable profit.

$$\pi_{OS}^S = \pi_{OS}^V - w_{L,OS} X_{L,OS} - w_{K,OS} X_{K,OS} \quad (3-1)$$

In that equation, $w_{L,OS}$ signifies the wage rate, $X_{L,OS}$ stands for labor input, $w_{K,OS}$ denotes capital user costs, and $X_{K,OS}$ represents the capital input.

Therefore, the variable profit maximization problem of soybean oil production is the following.

$$\max. \quad \pi_{OS}^V = p_{OS} Q_{OS} - p_{SB} QD_{SB} \quad (3-2)$$

$$\text{s.t.} \quad Q_{OS} = f_{Q,OS}(QD_{SB}, \overline{X_{L,OS}}, \overline{X_{K,OS}}) \quad (3-3)$$

In those expressions, p_{OS} signifies the price of soybean oil, Q_{OS} expresses the soybean oil output, p_{SB} denotes the price of soybeans, QD_{SB} stands for supply of soybeans which is equivalent to the supply of processed products. Presumably, the production function is specified as Cobb–Douglas type.

$$Q_{OS} = \alpha_{0,OS} QD_{SB}^{\alpha_{SB,OS}} \overline{X_{L,OS}}^{\alpha_{L,OS}} \overline{X_{K,OS}}^{\alpha_{K,OS}} \quad (3-4)$$

Solving the maximization problem with these constraints, the following Lagrangian function is set.

$$\begin{aligned} L = & p_{OS} Q_{OS} - p_{SB} QD_{SB} \\ & + \lambda_{OS} \left(Q_{OS} - \alpha_{0,OS} QD_{SB}^{\alpha_{SB,OS}} \right. \\ & \left. \times \overline{X_{L,OS}}^{\alpha_{L,OS}} \overline{X_{K,OS}}^{\alpha_{K,OS}} \right) \end{aligned} \quad (3-5)$$

The first-order conditions are the following.

$$\frac{\partial L}{\partial Q_{OS}} = p_{OS} + \lambda_{OS} = 0 \Rightarrow \lambda_{OS} = -p_{OS} \quad (3-6)$$

$$\begin{aligned} \frac{\partial L}{\partial QD_{SB}} = & -p_{SB} - \lambda_{OS} \alpha_{0,OS} \alpha_{SB,OS} QD_{SB}^{\alpha_{SB,OS}-1} \\ & \times \overline{X_{L,OS}}^{\alpha_{L,OS}} \overline{X_{K,OS}}^{\alpha_{K,OS}} = 0 \end{aligned} \quad (3-7)$$

Substituting (3-6) into (3-7), one obtains the following.

$$\begin{aligned} p_{OS} \alpha_{0,OS} \alpha_{SB,OS} QD_{SB}^{\alpha_{SB,OS}-1} \\ \times \overline{X_{L,OS}}^{\alpha_{L,OS}} \overline{X_{K,OS}}^{\alpha_{K,OS}} = & p_{SB} \\ QD_{SB}^{1-\alpha_{SB,OS}} = & (\alpha_{0,OS} \alpha_{SB,OS}) p_{OS} p_{SB}^{-1} \end{aligned}$$

$$\times \overline{X_{L,OS}}^{\alpha_{L,OS}} \overline{X_{K,OS}}^{\alpha_{K,OS}} \quad (3-8)$$

Taking the logarithm of (3-8), the soybean input demand function of soybean oil production is obtained as shown below.

$$\begin{aligned} (1 - \alpha_{SB,OS}) \ln QD_{SB} \\ = & \ln(\alpha_{0,OS} \alpha_{SB,OS}) + \ln p_{OS} - \ln p_{SB} \\ & + \alpha_{L,OS} \ln \overline{X_{L,OS}} + \alpha_{K,OS} \ln \overline{X_{K,OS}} \\ \ln QD_{SB} = & \frac{\ln(\alpha_{0,OS} \alpha_{SB,OS})}{1 - \alpha_{SB,OS}} \\ & + \frac{1}{1 - \alpha_{SB,OS}} \ln p_{OS} - \frac{1}{1 - \alpha_{SB,OS}} \ln p_{SB} \\ & + \frac{\alpha_{L,OS}}{1 - \alpha_{SB,OS}} \ln \overline{X_{L,OS}} + \frac{\alpha_{K,OS}}{1 - \alpha_{SB,OS}} \ln \overline{X_{K,OS}} \end{aligned} \quad (3-9)$$

The other oil crops input demand function for other vegetable oil production is obtained similarly to soybean oil production. In this case, the production function is specified as presented below.

$$Q_{OX} = \alpha_{0,OX} QD_{XS}^{\alpha_{XS,OX}} \overline{X_{L,OX}}^{\alpha_{L,OX}} \overline{X_{K,OX}}^{\alpha_{K,OX}} \quad (3-10)$$

In that expression, Q_{OX} represents the output of other vegetable oil, QD_{XS} represents the input of other oil crops, and $X_{L,OX}$ and $X_{K,OX}$ respectively denote the labor and capital inputs of other vegetable oil production. The other oil crop input demand function is the following.

$$\begin{aligned} \ln QD_{XS} = & \frac{\ln(\alpha_{0,OX} \alpha_{XS,OX})}{1 - \alpha_{XS,OX}} \\ & + \frac{1}{1 - \alpha_{XS,OX}} \ln p_{OX} - \frac{1}{1 - \alpha_{XS,OX}} \ln p_{XS} \\ & + \frac{\alpha_{L,OX}}{1 - \alpha_{XS,OX}} \ln \overline{X_{L,OX}} + \frac{\alpha_{K,OX}}{1 - \alpha_{XS,OX}} \ln \overline{X_{K,OX}} \end{aligned} \quad (3-11)$$

As shown there, p_{OX} is price of other vegetable oils; p_{XS} is the price of other oil crops.

The supply functions of soybean oil and other vegetable oils are obtained by substituting input demand functions of soybeans and other oil crops into the oil production functions. First, taking the logarithm of production functions (3-4) and (3-10) yields the following

functions.

$$\ln Q_{OS} = \ln \alpha_{0,OS} + \alpha_{SB,OS} \ln QD_{SB} + \alpha_{L,OS} \ln \overline{X_{L,OS}} + \alpha_{K,OS} \ln \overline{X_{K,OS}} \quad (3-12)$$

$$\ln Q_{OX} = \ln \alpha_{0,OX} + \alpha_{XS,OX} \ln QD_{XS} + \alpha_{L,OX} \ln \overline{X_{L,OX}} + \alpha_{K,OX} \ln \overline{X_{K,OX}} \quad (3-13)$$

Second, substituting input demand functions (3-9) and (3-11), respectively, into production functions (3-12) and (3-13) yields the following supply functions.

$$\begin{aligned} \ln Q_{OS} &= \frac{\ln \alpha_{0,OS} + \alpha_{SB,OS} \ln \alpha_{SB,OS}}{1 - \alpha_{SB,OS}} \\ &+ \frac{\alpha_{SB,OS}}{1 - \alpha_{SB,OS}} \ln p_{OS} - \frac{\alpha_{SB,OS}}{1 - \alpha_{SB,OS}} \ln p_{SB} \\ &+ \frac{\alpha_{L,OS}}{1 - \alpha_{SB,OS}} \ln \overline{X_{L,OS}} + \frac{\alpha_{K,OS}}{1 - \alpha_{SB,OS}} \ln \overline{X_{K,OS}} \end{aligned} \quad (3-14)$$

$$\begin{aligned} \ln Q_{OX} &= \frac{\ln \alpha_{0,OX} + \alpha_{XS,OX} \ln \alpha_{XS,OX}}{1 - \alpha_{XS,OX}} \\ &+ \frac{\alpha_{XS,OX}}{1 - \alpha_{XS,OX}} \ln p_{OX} - \frac{\alpha_{XS,OX}}{1 - \alpha_{XS,OX}} \ln p_{XS} \\ &+ \frac{\alpha_{L,OX}}{1 - \alpha_{XS,OX}} \ln \overline{X_{L,OX}} + \frac{\alpha_{K,OX}}{1 - \alpha_{XS,OX}} \ln \overline{X_{K,OX}} \end{aligned} \quad (3-15)$$

(2) Expectation model of supply of vegetable oil and oil cake

One can specify the supply function to the following linear function with expected prices as

$$Q_{Oit} = a_{Oit} + b_{Oit} p_{Oit}^* + c_{Oit} p_{S_{it}}^* + u_{Oit}, \quad (3-16)$$

where Q_{Oit} denotes the supply of oil i , p_{Oit}^* represents the expected price of oil or oil cake i , $p_{S_{it}}^*$ is the variable for the expected price of oil crop i , and u_{it} denotes error.

Adaptive expectation dictates that the expectation responses are updated by prior error as presented below.

$$p_{Oit}^* - p_{Oit-1}^* = (1 - \lambda)(p_{Oit-1} - p_{Oit-1}^*) \quad (3-17)$$

This equation can be rewritten as

$$p_{Oit}^* - \lambda p_{Oit-1}^* = (1 - \lambda)p_{Oit-1}. \quad (3-18)$$

The equation for oil crop i is derived similarly.

$$p_{S_{it}}^* - \lambda p_{S_{it-1}}^* = (1 - \lambda)p_{S_{it-1}} \quad (3-19)$$

By multiplying λ to the one-year-lagged function of (3-16), the following function is obtained.

$$\lambda Q_{Oit-1} = \lambda a_{Oit} + b_{Oit} \lambda p_{Oit-1}^* + \lambda c_{Oit} \lambda p_{S_{it-1}}^* + \lambda u_{Oit-1} \quad (3-20)$$

Subtracting function (3-20) from function (3-16) yields the function presented below.

$$\begin{aligned} Q_{Oit} - \lambda Q_{Oit-1} &= a_{Oit} (1 - \lambda) \\ &+ b_{Oit} (p_{Oit}^* - \lambda p_{Oit-1}^*) \\ &+ c_{Oit} (p_{S_{it}}^* - \lambda p_{S_{it-1}}^*) + u_{Oit} - \lambda u_{Oit-1} \end{aligned} \quad (3-21)$$

Substituting equations (3-18) and (3-19) into equation (3-21) yields the equation presented below.

$$\begin{aligned} Q_{Oit} &= a_{Oit} (1 - \lambda) + \lambda Q_{Oit-1} \\ &+ b_{Oit} (1 - \lambda) p_{Oit-1} \\ &+ c_{Oit} (1 - \lambda) p_{S_{it-1}} + u_{Oit} - \lambda u_{Oit-1} \end{aligned} \quad (3-22)$$

Therefore, the explanatory variables of the supply function are the supply of the prior year, price of the vegetable oil of the prior year, and price of the oil crop of the prior year.

In the same manner, the supply function of oil cakes based on the adaptive expectation is

$$\begin{aligned} Q_{Cit} &= a_{Cit} (1 - \lambda) + \lambda Q_{Cit-1} \\ &+ b_{Cit} (1 - \lambda) p_{Cit-1} \\ &+ c_{Cit} (1 - \lambda) p_{S_{it-1}} + u_{Cit} - \lambda u_{Cit-1}, \end{aligned} \quad (3-23)$$

where Q_{Cit} stands for the supply of oil cake i , p_{Cit} denotes the price of oil cake i , and $p_{S_{it}}$ represents the price of the oil crop.

(3) Summary of elasticities

Table 2-3-1 presents elasticities of the crop input demand of production of soybean and other vegetable oils for the output price, for the crop input price, and for the two inputs based on functions (3-9) and (3-11). Furthermore, Table 2-3-2 shows elasticities of vegetable oils supply for the output price, for the crop input price, and for the two inputs based on functions (3-14) and (3-15).

Table 2-3-1. Elasticity of input demand for vegetable oil.

	Oil output price	Crop input price	Labor input	Capital input
Crop input demand of soybean oil	$\frac{1}{1 - \alpha_{SB,OS}}$	$-\frac{1}{1 - \alpha_{SB,OS}}$	$\frac{\alpha_{L,OS}}{1 - \alpha_{SB,OS}}$	$\frac{\alpha_{K,OS}}{1 - \alpha_{SB,OS}}$
Crop input demand of other vegetable oils	$\frac{1}{1 - \alpha_{XS,OX}}$	$-\frac{1}{1 - \alpha_{XS,OX}}$	$\frac{\alpha_{L,OX}}{1 - \alpha_{XS,OX}}$	$\frac{\alpha_{K,OX}}{1 - \alpha_{XS,OX}}$

Table 2-3-2. Elasticity of supply for vegetable oil.

	Oil output price	Crop input price	Labor input	Capital input
Supply of soybean oil	$\frac{\alpha_{SB,OS}}{1 - \alpha_{SB,OS}}$	$-\frac{\alpha_{SB,OS}}{1 - \alpha_{SB,OS}}$	$\frac{\alpha_{L,OS}}{1 - \alpha_{SB,OS}}$	$\frac{\alpha_{K,OS}}{1 - \alpha_{SB,OS}}$
Supply of other vegetable oils	$\frac{\alpha_{XS,OX}}{1 - \alpha_{XS,OX}}$	$-\frac{\alpha_{XS,OX}}{1 - \alpha_{XS,OX}}$	$\frac{\alpha_{L,OX}}{1 - \alpha_{XS,OX}}$	$\frac{\alpha_{K,OX}}{1 - \alpha_{XS,OX}}$

4. Dairy products sector

Dairy product manufacturers are assumed to produce skimmed milk (*SK*), butter (butter and ghee) (*BT*), and cheese (*CH*) from raw milk (whole milk) (*MK*). Drinking milk is a food category of raw milk.

(1) Supply function of dairy products

A manufacturer of dairy products (*DP*: *SK*, *BT*, and *CH*) is assumed to produce butter by investing raw milk, labor, and capital. The latter two inputs are fixed factors. In this case, the short-run profit of dairy product production is found by subtracting labor costs and capital user costs from the variable profit.

$$\pi_i^S = \pi_i^V - w_{L,i}X_{L,i} - w_{K,i}X_{K,i} \quad (4-1)$$

In that equation, *i* is an index of dairy products: *SK*, *BT*, and *CH*. In addition, $w_{L,i}$ represents the wage rate, $w_{K,i}$ signifies the capital user cost, $X_{L,i}$ denotes the labor input, and $X_{K,i}$ stands for the capital input.

The variable profit maximization problem of dairy products production is

$$\max. \quad \pi_i^V = p_i Q_i - p_{MK} QDP_{MK,i} \quad (4-2)$$

$$\text{s.t.} \quad Q_i = f_{Q,i}(QDP_{MK,i}, X_{L,i}, X_{K,i}), \quad (4-3)$$

where p_i denotes the dairy product price, Q_i stands for the dairy product output, p_i signifies the raw milk price, and $QDP_{MK,i}$ denotes the raw milk supply necessary for producing the dairy products. The production function is assumed to be Cobb–Douglas type.

$$Q_i = \alpha_{0,i} QDP_{MK,i}^{\alpha_{MK,i}} X_{L,i}^{\alpha_{L,i}} X_{K,i}^{\alpha_{K,i}} \quad (4-4)$$

Solving the maximization problem with these constraints, the following Lagrangian function is set.

$$L = p_i Q_i - p_{MK} QDP_{MK,i} + \lambda_i \left(Q_i - \alpha_{0,i} QDP_{MK,i}^{\alpha_{MK,i}} X_{L,i}^{\alpha_{L,i}} X_{K,i}^{\alpha_{K,i}} \right) \quad (4-5)$$

The first-order conditions are those presented below.

$$\frac{\partial L}{\partial Q_i} = p_i + \lambda_i = 0 \Rightarrow \lambda_i = -p_i \quad (4-6)$$

$$\frac{\partial L}{\partial QDP_{MK,i}} = -p_{MK}$$

$$-\lambda_i \alpha_{0,i} \alpha_{MK,i} QDP_{MK,i}^{\alpha_{MK,i}-1} X_{L,i}^{\alpha_{L,i}} X_{K,i}^{\alpha_{K,i}} = 0 \quad (4-7)$$

Substituting (4-6) into (4-7), one obtains the following.

$$\begin{aligned} p_i \alpha_{0,i} \alpha_{MK,i} QDP_{MK,i}^{\alpha_{MK,i}-1} X_{L,i}^{\alpha_{L,i}} X_{K,i}^{\alpha_{K,i}} \\ = p_{MK} \\ QDP_{MK,i}^{1-\alpha_{MK,i}} \\ = (\alpha_{0,i} \alpha_{MK,i}) p_i p_{MK}^{-1} X_{L,i}^{\alpha_{L,i}} X_{K,i}^{\alpha_{K,i}} \end{aligned} \quad (4-8)$$

Taking the logarithm of (4-8), the raw milk input demand function of the dairy products production is obtained as presented below.

$$\begin{aligned} (1 - \alpha_{MK,i}) \ln QDP_{MK,i} \\ = \ln(\alpha_{0,i} \alpha_{MK,i}) + \ln p_i - \ln p_{MK} \\ + \alpha_{L,i} \ln X_{L,i} + \alpha_{K,i} \ln X_{K,i} \\ \ln QDP_{MK,i} = \frac{\ln(\alpha_{0,i} \alpha_{MK,i})}{1 - \alpha_{MK,i}} \\ + \frac{1}{1 - \alpha_{MK,i}} \ln p_i - \frac{1}{1 - \alpha_{MK,i}} \ln p_{MK} \\ + \frac{\alpha_{L,i}}{1 - \alpha_{MK,i}} \ln X_{L,i} + \frac{\alpha_{K,i}}{1 - \alpha_{MK,i}} \ln X_{K,i} \end{aligned} \quad (4-9)$$

The supply functions of the dairy products are obtained by substituting the input demand function of raw milk into the production function of the dairy products. First, taking the logarithm of production functions (4-4), the related functions are obtained as presented below.

$$\begin{aligned} \ln Q_i = \ln \alpha_{0,i} + \alpha_{MK,i} \ln QDP_{MK,i} \\ + \alpha_{L,i} \ln X_{L,i} + \alpha_{K,i} \ln X_{K,i} \end{aligned} \quad (4-10)$$

Second, by substituting input demand functions (4-9) into the production functions (4-10), the supply function is obtained as presented below.

$$\begin{aligned}
\alpha_{MK,i} \ln QDP_{MK,i} &= \frac{\alpha_{MK,i} \ln(\alpha_{0,i} \alpha_{MK,i})}{1 - \alpha_{MK,i}} \\
&+ \frac{\alpha_{MK,i}}{1 - \alpha_{MK,i}} \ln p_i - \frac{\alpha_{MK,i}}{1 - \alpha_{MK,i}} \ln p_{MK} \\
&+ \frac{\alpha_{MK,i} \alpha_{L,i}}{1 - \alpha_{MK,i}} \ln \overline{X_{L,i}} + \frac{\alpha_{MK,i} \alpha_{K,i}}{1 - \alpha_{MK,i}} \ln \overline{X_{K,i}} \\
\ln Q_i &= \ln \alpha_{0,i} + \frac{\alpha_{MK,i}}{1 - \alpha_{MK,i}} (\ln \alpha_{0,i} + \ln \alpha_{MK,i}) \\
&+ \frac{\alpha_{MK,i}}{1 - \alpha_{MK,i}} \ln p_i - \frac{\alpha_{MK,i}}{1 - \alpha_{MK,i}} \ln p_{MK} \\
&+ \left(1 + \frac{\alpha_{MK,i}}{1 - \alpha_{MK,i}}\right) \alpha_{L,i} \ln \overline{X_{L,i}} \\
&+ \left(1 + \frac{\alpha_{MK,i}}{1 - \alpha_{MK,i}}\right) \alpha_{K,i} \ln \overline{X_{K,i}} \\
\ln Q_i &= \frac{1}{1 - \alpha_{MK,i}} \ln \alpha_{0,i} + \frac{\alpha_{MK,i}}{1 - \alpha_{MK,i}} \ln \alpha_{MK,i} \\
&+ \frac{\alpha_{MK,i}}{1 - \alpha_{MK,i}} \ln p_i - \frac{\alpha_{MK,i}}{1 - \alpha_{MK,i}} \ln p_{MK} \\
&+ \frac{\alpha_{L,i}}{1 - \alpha_{MK,i}} \ln \overline{X_{L,i}} + \frac{\alpha_{K,i}}{1 - \alpha_{MK,i}} \ln \overline{X_{K,i}} \quad (4-11)
\end{aligned}$$

(2) Expectations model of supply of dairy products

The supply function is specified as the following linear function with expected prices of

$$Q_{Di} = a_{Di} + b_{Di} p_{Di}^* + c_{Di} p_{MKi}^* + u_{Di}, \quad (4-12)$$

where Q_{Di} represents the supply of dairy products Di , p_{Di}^* denotes the expected price of dairy products Di , p_{MKi}^*

signifies the expected price of raw milk, and u_{Di} is the error term.

Adaptive expectations entail the assumption that the update of expectation responses to prior error occurs as

$$p_{Di}^* - p_{Di-1}^* = (1 - \lambda)(p_{Di-1} - p_{Di-1}^*). \quad (4-13)$$

This equation can be rewritten as

$$p_{Di}^* - \lambda p_{Di-1}^* = (1 - \lambda) p_{Di-1}. \quad (4-14)$$

In the same manner, the following equation for raw milk is derived.

$$p_{MKi}^* - \lambda p_{MKi-1}^* = (1 - \lambda) p_{MKi-1} \quad (4-15)$$

Multiplying λ by the one year lagged function of (4-12) produces the following function.

$$\begin{aligned}
\lambda Q_{Di-1} &= \lambda a_{Di} + b_{Di} \lambda p_{Di-1}^* + c_{Di} \lambda p_{MKi-1}^* \\
&+ \lambda u_{Di-1} \quad (4-16)
\end{aligned}$$

Subsequently, subtracting function (4-16) from function (4-12) gives the following function.

$$\begin{aligned}
Q_{Di} - \lambda Q_{Di-1} &= a_{Di} (1 - \lambda) + b_{Di} (p_{Di}^* - \lambda p_{Di-1}^*) \\
&+ c_{Di} (p_{MKi}^* - \lambda p_{MKi-1}^*) + u_{Di} - \lambda u_{Di-1} \quad (4-17)
\end{aligned}$$

Substituting equations (4-14) and (4-15) into equation (4-17) yields the equation presented below.

$$\begin{aligned}
Q_{Di} &= a_{Di} (1 - \lambda) + \lambda Q_{Di-1} + b_{Di} (1 - \lambda) p_{Di-1} \\
&+ c_{Di} (1 - \lambda) p_{MKi-1} + u_{Di} - \lambda u_{Di-1} \quad (4-18)
\end{aligned}$$

Therefore, the explanatory variables of the supply function are the supply of the prior year, the price of dairy products of the prior year, and the price of raw milk of the prior year.

(3) Summary of elasticities

Table 2-4-1 presents elasticities of input demand of milk production for the output price, for the milk price, and for the two inputs based on function (4-9). In the same manner, Table 2-4-2 shows elasticities of dairy product supply for output price, for milk price, and for the two inputs, based on function (4-11).

Table 2-4-1. Elasticity of input demand for raw milk.

	Dairy product output price	Raw milk input price	Labor input	Capital input
Raw milk input demand of dairy products	$\frac{1}{1 - \alpha_{MK,DP}}$	$\frac{1}{1 - \alpha_{MK,DP}}$	$\frac{\alpha_{L,DP}}{1 - \alpha_{MK,DP}}$	$\frac{\alpha_{K,DP}}{1 - \alpha_{MK,DP}}$

DP: SK, BT, and CH

Table 2-4-2. Elasticity of supply for dairy products.

	Dairy product output price	Raw milk input price	Labor input	Capital input
Supply of dairy products	$\frac{\alpha_{MK,DP}}{1 - \alpha_{MK,DP}}$	$\frac{\alpha_{MK,DP}}{1 - \alpha_{MK,DP}}$	$\frac{\alpha_{L,DP}}{1 - \alpha_{MK,DP}}$	$\frac{\alpha_{K,DP}}{1 - \alpha_{MK,DP}}$

DP: SK, BT, and CH

5. Demand sector

The consumption section is assumed to include 18 goods. Regarding the demand of agricultural products, retail prices of rice reflects consumption of steam rice after cooking purchased milled rice. However, no retail prices of wheat and other cereals exist in many cases because consumers eat those processed foods such as bread or noodles. Therefore, in consumer demand analyses, the substitutes of rice are not as wheat but bread or noodles. Retail prices of these processed foods are included as variables of the demand functions.

Results that are closer to the true figures will be obtained using the model if the processing stage of these crops is included in this model. However, if one were to include only the processing industry of wheat, then many related industries such as bread, noodles, flour, and cakes would also be included. The resultant model can be expected to become exceedingly complex. In consideration of this tendency, input demand functions of crops for the respective industries will be derived.

(1) Derivation of a short-run input demand function

Input demand functions of agricultural goods for food production can be derived. The demand function in this sector is the conditional input demand function, for which the food production is given because foods are necessity goods. They will be produced around a rational quantity. The variable cost minimization problem of a food producer is set as follows. Variable inputs of this model are six crops (*RI, WH, MZ, XG, SB, and XS*), two oils (*OS and OX*), five meats (*BF, SH, PK, PM, and XM*), eggs (*EG*), and four dairy products (*MK, SK, BT, and CH*). The fixed inputs are labor and capital.

$$C = C^V + w_L X_L + w_K X_K \quad (5-1)$$

$$\min. \quad C^V = \sum_i p_i QDF_i \quad (5-2)$$

$$\text{s.t.} \quad QF = f_{QF}(QDF_{RI}, \dots, QDF_{CH}, X_L, X_K) \quad (5-3)$$

Therein, C signifies the total cost, C^V represents the variable cost, and i is an index of agricultural products for inputs of food production of *RI, WH, MZ, XG, SB, XS, OS, OX, BF, SH, PK, PM, XM, EG, MK, SK, BT, and CH*. In addition, p_i is an input price such as the wholesale price of the products, QDF_i is an input quantity of the products, QF represents dishes that are placed on a table, w_L and w_K respectively denote the wage rate and capital user costs, and X_L and X_K are labor and capital inputs for the food production company.

The production function (5-3) is specified as the following Cobb–Douglas type.

$$QF = \alpha_0 \prod_i QDF_i^{\alpha_i} X_L^{\alpha_{XL}} X_K^{\alpha_{XK}} \quad (5-4)$$

Solving the minimization problem with these constraints, the following Lagrangian function is set.

$$L = \sum_i p_i QDF_i - \lambda \left(QF - \alpha_0 \prod_i QDF_i^{\alpha_i} X_L^{\alpha_{XL}} X_K^{\alpha_{XK}} \right) \quad (5-5)$$

$$\begin{aligned} \frac{\partial L}{\partial QDF_j} &= p_j \\ -\lambda \alpha_0 \alpha_j QDF_j^{\alpha_j - 1} \prod_{i \neq j} QDF_i^{\alpha_i} X_L^{\alpha_{XL}} X_K^{\alpha_{XK}} &= 0 \\ \forall j & \end{aligned} \quad (5-6)$$

Substituting (5-4) into (5-6), one obtains the following.

$$\begin{aligned} p_j &= \lambda \alpha_j QDF_j^{-1} QF \\ \Rightarrow \lambda QF &= \alpha_j^{-1} p_j QDF_j \quad \forall j \end{aligned} \quad (5-7)$$

Function (5-7) holds for $k \neq j$:

$$\begin{aligned} \alpha_k^{-1} p_k QDF_k &= \alpha_j^{-1} p_j QDF_j \\ QDF_k &= \alpha_j^{-1} \alpha_k p_j p_k^{-1} QDF_j \quad \forall k \neq j, \forall j \end{aligned} \quad (5-8)$$

Substituting (5-8) into production function (5-4) produces the following function.

$$\begin{aligned} QF &= \alpha_0 \prod_i QDF_i^{\alpha_i} X_L^{\alpha_{XL}} X_K^{\alpha_{XK}} \\ &= \left(\alpha_j^{-1} \alpha_{RI} p_j p_{RI}^{-1} QDF_j \right)^{\alpha_{RI}} \\ &\quad \times \dots \times \left(\alpha_j^{-1} \alpha_{CH} p_j p_{CH}^{-1} QDF_j \right)^{\alpha_{CH}} \\ &\quad \times \alpha_0 X_L^{\alpha_{XL}} X_K^{\alpha_{XK}} \\ QF &= QDF_j^{\alpha_{RI} + \dots + \alpha_{CH}} p_j^{\alpha_{RI} + \dots + \alpha_{CH}} \\ &\quad \times \alpha_j^{-\alpha_{RI} - \dots - \alpha_{CH}} p_{RI}^{-\alpha_{RI}} \dots p_{CH}^{-\alpha_{CH}} \\ &\quad \times \alpha_{RI}^{\alpha_{RI}} \dots \alpha_{CH}^{\alpha_{CH}} \alpha_0 X_L^{\alpha_{XL}} X_K^{\alpha_{XK}} \end{aligned}$$

Substituting $\beta = \alpha_{RI} + \dots + \alpha_{CH}$ into the equation above, the following function is obtained.

$$QDF_j^\beta = QF \cdot p_j^{-\beta} \alpha_j^\beta p_{RI}^{\alpha_{RI}} \dots p_{CH}^{\alpha_{CH}}$$

$$\begin{aligned}
 & \times \alpha_{RI}^{-\alpha_{RI}} \dots \alpha_{CH}^{-\alpha_{CH}} \alpha_0^{-1} X_L^{-\alpha_{XL}} X_K^{-\alpha_{XK}} \\
 QDF_j &= QF^{\frac{1}{\beta}} p_j^{-1} \alpha_j \frac{\alpha_{RI}}{p_{RI}^\beta} \dots p_{CH} \frac{\alpha_{CH}}{\beta} \\
 & \times \alpha_{RI} \frac{\alpha_{RI}}{\beta} \dots \alpha_{CH} \frac{\alpha_{CH}}{\beta} \alpha_0 \frac{1}{\beta} X_L \frac{\alpha_{XL}}{\beta} X_K \frac{\alpha_{XK}}{\beta} \\
 & = QF^{\frac{1}{\beta}} p_{RI} \frac{\alpha_{RI}}{\beta} \dots p_j \frac{\alpha_j}{\beta} \dots p_{CH} \frac{\alpha_{CH}}{\beta} \\
 & \times \alpha_{RI} \frac{\alpha_{RI}}{\beta} \dots \alpha_j \frac{\alpha_j}{\beta} \dots \alpha_{CH} \frac{\alpha_{CH}}{\beta} \\
 & \times \alpha_0 \frac{1}{\beta} X_L \frac{\alpha_{XL}}{\beta} X_K \frac{\alpha_{XK}}{\beta} \\
 & = QF^{\frac{1}{\beta}} p_{RI} \frac{\alpha_{RI}}{\beta} \dots p_j \frac{\beta - \alpha_j}{\beta} \dots p_{CH} \frac{\alpha_{CH}}{\beta} \\
 & \times \alpha_{RI} \frac{\alpha_{RI}}{\beta} \dots \alpha_j \frac{\beta - \alpha_j}{\beta} \dots \alpha_{CH} \frac{\alpha_{CH}}{\beta} \\
 & \times \alpha_0 \frac{1}{\beta} X_L \frac{\alpha_{XL}}{\beta} X_K \frac{\alpha_{XK}}{\beta} \quad \forall j \tag{5-9}
 \end{aligned}$$

Table 2-5-1 presents elasticities of input demand for food of equation (5-9).

The parameters of the production functions are obtained by solving the profit maximization problem. The profit is

$$\begin{aligned}
 \pi &= p_F \alpha_0 \prod_i QDF_i^{\alpha_i} X_L^{\alpha_{XL}} X_K^{\alpha_{XK}} \\
 & - \sum_i p_i QDF_i .
 \end{aligned}$$

The first-order condition of the problem is

$$\frac{\partial \pi}{\partial QDF_i} = \alpha_i p_F \frac{QF}{QDF_i} - p_i = 0 .$$

Therefore,

$$\alpha_i = \frac{p_i QDF_i}{p_F QF} \quad \forall i, \tag{5-10}$$

$$\beta = \sum_i \alpha_i = \frac{\sum_i p_i QDF_i}{p_F QF} , \tag{5-11}$$

where p_F represents the price of food.

Table 2-5-1 Conditional price elasticity of input demand.

		Output	Input price			
			RI	WH	...	CH
Input demand	RI	$\frac{1}{\beta}$	$-1 + \frac{\alpha_{RI}}{\beta}$	$\frac{\alpha_{WH}}{\beta}$...	$\frac{\alpha_{CH}}{\beta}$
	WH	$\frac{1}{\beta}$	$\frac{\alpha_{RI}}{\beta}$	$-1 + \frac{\alpha_{WH}}{\beta}$...	$\frac{\alpha_{CH}}{\beta}$
	⋮	⋮	⋮	⋮	⋮	⋮
	CH	$\frac{1}{\beta}$	$\frac{\alpha_{RI}}{\beta}$	$\frac{\alpha_{WH}}{\beta}$...	$-1 + \frac{\alpha_{CH}}{\beta}$

Chapter 3. Supply and demand of agricultural products

1. Supply and demand of grains

This model incorporates the following four crops: rice (*RI*), wheat (*WH*), maize (*MZ*), and other grains (*XG*). Crop *Gi* is investigated as described in this section.

The production of crop *Gi* is calculated as

$$Q_{Git} = Y_{Git} A_{Git}, \quad (6-1)$$

where *Gi* is an index of crops, i.e., *RI*, *WH*, *MZ*, or *XG*. In addition, *t* denotes the year, *Y_{Git}* represents the yield, and *A_{Git}* stands for the planted area. For this model, the planted area is assumed as equal to the harvested area.

The supply of crop *Gi* is obtained from the following identity as

$$QD_{Git} = Q_{Git} + IM_{Git} + ST_{Git-1} - EX_{Git} - ST_{Git}, \quad (6-2)$$

where *IM_{Git}* stands for imports, *ST_{Git-1}* denotes the beginning stock, *EX_{Git}* expresses exports, and *ST_{Git}* signifies the ending stock. Identity (6-2) can be rewritten as

$$QD_{Git} = Q_{Git} - NEX_{Git} - STC_{Git}, \quad (6-3)$$

where *NEX_{Git}* = *EX_{Git}* - *IM_{Git}*, i.e. net exports, *STC_{Git}* = *ST_{Git}* - *ST_{Git-1}*, i.e. stock change.

The net exports are obtained from identity (6-3) as

$$NEX_{Git} = Q_{Git} - QD_{Git} - STC_{Git}. \quad (6-4)$$

The stock change of the crop is calculated as

$$STC_{Git} = STC_{Git-1} \frac{Q_{Git} - Q_{Git-1}}{Q_{Git-1} - Q_{Git-2}} \quad (6-5)$$

The rate of change of ending stock is assumed to be equal to that of production.

The supply of crop *Gi* is also obtained from the following identity.

$$QD_{Git} = QDF_{Git} + QDL_{Git} + QDS_{Git} + QDW_{Git} + QDP_{Git} + QDO_{Git} + QDX_{Git} \quad (6-6)$$

Variables used in that identity are *QDF_{Git}* as food demand, *QDL_{Git}* as feed demand, *QDS_{Git}* as seed demand, *QDW_{Git}* as waste, *QDP_{Git}* as process demand, *QDO_{Git}* as other use, and *QDX_{Git}* as the error in FAOSTAT.

For simplification, the food demand function for grains of crop *Gi* is specified as the following linear function in this section.

$$QDF_{Git} = \gamma_{0Gi} + \sum_l \gamma_{Gi,l} P_{lt} + \gamma_{Mi} \frac{GDP_t}{POP_t} \quad (6-7)$$

This demand function is based on the input demand function (5-9). A per-capita income term is added. In that function, *l* represents food goods, i.e., *RI*, *WH*, *MZ*, *XG*, soybeans (*SB*), other oil crops (*XS*), soybean oil (*OS*), other vegetable oil (*OX*), beef (*BF*), mutton (*SH*), pork (*PK*), poultry meat (*PM*), other meats (*XM*), poultry eggs (*EG*), and raw milk (*MK*), skim milk (*SK*), butter (*BT*), or cheese (*CH*); also, *p_{it}* represents the price of crop *Gi*. Variables *GDP_t*, *POP_t* respectively denote the gross domestic products (GDP) and population of the country.

The feed demand of crop *Gi* is specified as the following linear function.

$$QDL_{Git} = \delta_{0Gij} + \delta_{Gij,j} p_{jt} + \sum_k \delta_{Gij,k} p_{kt} \quad (6-8)$$

Therein, *k* can be any of feed crops and cakes, i.e., *RI*, *WH*, *MZ*, *XG*, *SB*, *XS*, soybean cake (*CS*), or other cakes (*CX*). Also, *j* is meats, eggs, and milk, i.e., beef (*BF*), mutton (*SH*), pork (*PK*), poultry meat (*PM*), other meats (*XM*), poultry eggs (*EG*), or raw milk (*MK*).

The quantities of feed for livestock production are not apparent. Therefore, the following aggregated feed demand function is inferred.

$$\begin{aligned} QDL_{Git} &= \sum_j QDL_{Gijt} \\ &= \sum_j \delta_{0Gij} + \sum_j \delta_{Gij,j} p_{jt} + \sum_j \sum_k \delta_{Gij,k} p_{kt} \end{aligned} \quad (6-9)$$

The seed supply of the crop is calculated using the following equation.

$$QDS_{Git} = QDS_{Git-1} \frac{Q_{Git}}{Q_{Git-1}} \quad (6-10)$$

The rate of increase of seed supply is assumed to be equal to that of production.

The quantity of crop waste is obtained using the following equation.

$$QDW_{Git} = QDW_{Git-1} \frac{QD_{Git}}{QD_{Git-1}} \quad (6-11)$$

The rate of waste increase is assumed to be equal to that of the supply.

The process supply and other use are calculated respectively using the following equations.

$$QDP_{Git} = QDP_{Git-1} \frac{GDP_t}{GDP_{t-1}} \quad (6-12)$$

$$QDO_{Git} = QDO_{Git-1} \frac{GDP_t}{GDP_{t-1}} \quad (6-13)$$

The rate of increase of the process and other use are assumed to be equal to those of GDP.

Substituting equations (6-10)–(6-13) into equation (6-6) yields the equation shown below.

$$\begin{aligned} QD_{Git} &= QDF_{Git} + QDL_{Git} \\ &+ QDS_{Git-1} \frac{Q_{Git}}{Q_{Git-1}} + QDW_{Git-1} \frac{QD_{Git}}{QD_{Git-1}} \\ &+ (QDP_{Git-1} + QDO_{Git-1}) \frac{GDP_t}{GDP_{t-1}} + QDX_{Git} \\ QDF_{Git} &= QD_{Git} - QDL_{Git} \\ &- QDS_{Git-1} \frac{Q_{Git}}{Q_{Git-1}} - QDW_{Git-1} \frac{QD_{Git}}{QD_{Git-1}} \end{aligned}$$

$$-(QDP_{Git-1} + QDO_{Git-1}) \frac{GDP_t}{GDP_{t-1}} - QDX_{Git} \quad (6-14)$$

By substituting (6-3) into (6-14), the following equation is obtained.

$$\begin{aligned} QDF_{Git} &= -QDL_{Git} - \frac{QDS_{Git-1}}{Q_{Git-1}} Q_{Git} \\ &+ \left(1 - \frac{QDW_{Git-1}}{QD_{Git-1}}\right) (Q_{Git} - NEX_{Git} - STC_{Git}) \\ &- (QDP_{Git-1} + QDO_{Git-1}) \frac{GDP_t}{GDP_{t-1}} + QDX_{Git} \\ QDF_{Git} + QDL_{Git} &= \left(1 - \frac{QDS_{Git-1}}{QD_{Git-1}} - \frac{QDW_{Git-1}}{Q_{Git-1}}\right) Q_{Git} \\ &- \left(1 - \frac{QDW_{Git-1}}{QD_{Git-1}}\right) (NEX_{Git} + STC_{Git}) \\ &- (QDP_{Git-1} + QDO_{Git-1}) \frac{GDP_t}{GDP_{t-1}} + QDX_{Git} \quad (6-15) \end{aligned}$$

Substituting the food demand function (6-7) and the feed demand function (6-9) into equation (6-15) gives the following equation.

$$\begin{aligned} &\gamma_{0Gi} + \sum_l \gamma_{Gi,l} P_{lt} \\ &+ \sum_j \delta_{0Gij} + \sum_j \delta_{Gij,j} P_{jt} + \sum_j \sum_k \delta_{Gij,k} P_{kt} \\ &= \left(1 - \frac{QDS_{Git-1}}{QD_{Git-1}} - \frac{QDW_{Git-1}}{Q_{Git-1}}\right) Q_{Git} \\ &- \left(1 - \frac{QDW_{Git-1}}{QD_{Git-1}}\right) (NEX_{Git} + STC_{Git}) \\ &- (QDP_{Git-1} + QDO_{Git-1}) \frac{GDP_t}{GDP_{t-1}} + QDX_{Git} \\ &- \gamma_{MGi} \frac{GDP_t}{POP_t} \quad (6-16) \end{aligned}$$

Equation (6-16) consists of the four crop Gi : those of RI , WH , MZ , and XG .

The left side of equation (6-16) is a summation of a part of the food demand function for which explanatory variables are the prices of the 18 food goods and the feed demand function for which explanatory variables are the prices of the six crops and two cakes. Therefore, this equation includes prices of all 20 goods, quantities such as production or net exports of the four crops, GDP, and population. Variables aside from prices are obtained as exogenous or predetermined variables. NEX_{Git} is inferred from the world clearing condition.

Solving the simultaneous equations requires 16 other functions. The respective functions for production of two oil crops, two oils, two cakes, five meats, one egg, one

milk, and three dairy products are shown next.

The supply equations of the four crops are summarized from equation (6-14) for convenience as presented below.

$$\begin{aligned} QD_{Git} - QDW_{Git-1} \frac{QD_{Git}}{QD_{Git-1}} &= QDF_{Git} + QDL_{Git} \\ &+ QDS_{Git-1} \frac{Q_{Git}}{Q_{Git-1}} \\ &+ (QDP_{Git-1} + QDO_{Git-1}) \frac{GDP_t}{GDP_{t-1}} + QDX_{Git} \\ QD_{Git} \left(1 - \frac{QDW_{Git-1}}{QD_{Git-1}}\right) &= QDF_{Git} + QDL_{Git} \\ &+ QDS_{Git-1} \frac{Q_{Git}}{Q_{Git-1}} \\ &+ (QDP_{Git-1} + QDO_{Git-1}) \frac{GDP_t}{GDP_{t-1}} + QDX_{Git} \\ QD_{Git} &= \frac{QD_{Git-1}}{QD_{Git-1} - QDW_{Git-1}} \\ &\times \left[QDF_{Git} + QDL_{Git} + QDS_{Git-1} \frac{Q_{Git}}{Q_{Git-1}} \right. \\ &\left. + (QDP_{Git-1} + QDO_{Git-1}) \frac{GDP_t}{GDP_{t-1}} + QDX_{Git} \right] \quad (6-17) \end{aligned}$$

2. Supply and demand of oil crops

The oil crops incorporated into this model consist of the following two crops: soybeans (SB) and other oil crops (XS). Oil crop Si is investigated in this section.

The production of oil crop Si is calculated using the following equation.

$$Q_{Sit} = Y_{Sit} A_{Sit} \quad (7-1)$$

In that equation, Si is an index of oil crops, i.e., SB and XS , t represents the year, Y_{Sit} denotes yield, and A_{Sit} expresses the planted area.

The supply equation is written as

$$QD_{Sit} = Q_{Sit} - NEX_{Sit} - STC_{Sit}, \quad (7-2)$$

where NEX_{Sit} denotes net exports and STC_{Sit} denotes the stock change.

The net exports are obtained from identity (7-2).

$$NEX_{Sit} = Q_{Sit} - QD_{Sit} - STC_{Sit} \quad (7-3)$$

The stock change of the oil crop is calculated using the following equation.

$$STC_{Sit} = STC_{Sit-1} \frac{Q_{Sit} - Q_{Sit-1}}{Q_{Sit-1} - Q_{Sit-2}} \quad (7-4)$$

The supply of oil crop Si is obtained from the following identity.

$$\begin{aligned} QD_{Sit} &= QDF_{Sit} + QDL_{Sit} + QDS_{Sit} \\ &+ QDW_{Sit} + QDP_{Sit} + QDO_{Sit} + QDX_{Sit} \quad (7-5) \end{aligned}$$

Therein, QDF_{Sit} stands for food demand, QDL_{Sit} denotes

feed demand, QDS_{Sit} represents seed demand, QDW_{Sit} stands for waste, QDP_{Sit} denotes process demand, QDO_{Sit} signifies other use, and QDX_{Sit} expresses error in the FAOSTAT.

For simplification, the food demand function of beans or seeds of oil crop Si is specified in this section as the following linear function.

$$QDF_{Sit} = \gamma_{0Si} + \sum_l \gamma_{Si,l} P_{lt} + \gamma_{MSi} \frac{GDP_t}{POP_t} \quad (7-6)$$

Therein, l represents the 18 food goods in this model.

The feed demand of oil crop Si is specified as the following linear function where the quantity is small.

$$QDL_{Sijt} = \delta_{0Sij} + \delta_{Sij,j} P_{jt} + \sum_k \delta_{Sij,k} P_{kt} \quad (7-7)$$

In that equation, k represents feed crops and cakes. j is livestock products.

The aggregated feed demand is the following.

$$\begin{aligned} QDL_{Sit} &= \sum_j QDL_{Sijt} \\ &= \sum_j \delta_{0Sij} + \sum_j \delta_{Sij,j} P_{jt} + \sum_j \sum_k \delta_{Sij,k} P_{kt} \end{aligned} \quad (7-8)$$

The seed supply of the oil crop is calculated using the following equation.

$$QDS_{Sit} = QDS_{Sit-1} \frac{Q_{Sit}}{Q_{Sit-1}} \quad (7-9)$$

The rate of increase of the seed supply is assumed to be equal to that of production.

The quantity of waste of the oil crop is obtained using the following equation.

$$QDW_{Sit} = QDW_{Sit-1} \frac{QD_{Sit}}{QD_{Sit-1}} \quad (7-10)$$

The rate of increase of waste is assumed to be equal to that of the total supply.

The oil crop input demand function of the oil production is specified as follows. In this case, oil alone is the processed product of the oil crop.

$$QDP_{Sit} = \zeta_{0Si} + \zeta_{Si,Oi} P_{Oit} + \zeta_{Si,i} P_{Sit} \quad (7-11)$$

In that equation, p_{Oit} signifies the oil price of the oil crop Si ; p_{Sit} stands for the price of the oil crop. Labor and capital inputs for oil production are omitted for simplification.

The process supply of the oil crop is calculated as

$$QDP_{Sit} = QDP_{Sit-1} \frac{QD_{Sit}}{QD_{Sit-1}}, \quad (7-12)$$

The rates of increase of the process supply are assumed to be equal to that of the total supply.

The other use of the oil crop is calculated using the following equation.

$$QDO_{Sit} = QDO_{Sit-1} \frac{GDP_t}{GDP_{t-1}} \quad (7-13)$$

The rates of increase of other use are assumed to be equal to that of GDP.

Substituting equations (7-9), (7-10), and (7-13) into equation (7-5) yields the equation shown below.

$$\begin{aligned} QD_{Sit} &= QDF_{Sit} + QDL_{Sit} + QDP_{Sit} \\ &+ QDS_{Sit-1} \frac{Q_{Sit}}{Q_{Sit-1}} + QDW_{Sit-1} \frac{QD_{Sit}}{QD_{Sit-1}} \\ &+ QDO_{Sit-1} \frac{GDP_t}{GDP_{t-1}} + QDX_{Sit} \end{aligned} \quad (7-14)$$

Rewriting (7-14) for food demand, and substituting (7-2) yields the equation shown below.

$$\begin{aligned} QDF_{Sit} &= QD_{Sit} - QDL_{Sit} - QDP_{Sit} \\ &- QDS_{Sit-1} \frac{Q_{Sit}}{Q_{Sit-1}} - QDW_{Sit-1} \frac{QD_{Sit}}{QD_{Sit-1}} \\ &- QDO_{Sit-1} \frac{GDP_t}{GDP_{t-1}} - QDX_{Sit} \\ &= -QDL_{Sit} - QDP_{Sit} \\ &- \frac{QDS_{Sit-1}}{Q_{Sit-1}} Q_{Sit} \\ &+ \left(1 - \frac{QDW_{Sit-1}}{QD_{Sit-1}}\right) (Q_{Sit} - NEX_{Sit} - STC_{Sit}) \\ &- QDO_{Sit-1} \frac{GDP_t}{GDP_{t-1}} - QDX_{Sit} \\ &= QDF_{Sit} + QDL_{Sit} + QDP_{Sit} \\ &= \left(1 - \frac{QDS_{Sit-1}}{Q_{Sit-1}} - \frac{QDW_{Sit-1}}{QD_{Sit-1}}\right) Q_{Sit} \\ &- \left(1 - \frac{QDW_{Sit-1}}{QD_{Sit-1}}\right) (NEX_{Sit} + STC_{Sit}) \\ &- QDO_{Sit-1} \frac{GDP_t}{GDP_{t-1}} - QDX_{Sit} \end{aligned} \quad (7-15)$$

Substituting the food demand function (7-6), the feed demand function (7-8), and the process demand function (7-11) into equation (7-15) yields the equation shown below.

$$\begin{aligned} &\gamma_{0Si} + \sum_l \gamma_{Si,l} P_{lt} \\ &+ \sum_j \delta_{0Sij} + \sum_j \delta_{Sij,j} P_{jt} + \sum_j \sum_k \delta_{Sij,k} P_{kt} \\ &+ \zeta_{0Si} + \zeta_{Si,Oi} P_{Oit} + \zeta_{Si,i} P_{Sit} \end{aligned}$$

$$\begin{aligned}
&= \left(1 - \frac{QDS_{Sit-1}}{Q_{Sit-1}} - \frac{QDW_{Sit-1}}{QD_{Sit-1}} \right) Q_{Sit} \\
&\quad - \left(1 - \frac{QDW_{Sit-1}}{QD_{Sit-1}} \right) (NEX_{Sit} + STC_{Sit}) \\
&\quad - QDO_{Sit-1} \frac{GDP_t}{GDP_{t-1}} - QDX_{Sit} - \gamma_{MSi} \frac{GDP_t}{POP_t}
\end{aligned} \tag{7-16}$$

The left side of equation (7-16) includes prices of all 20 goods. Quantities on the right side include of exogenous variables and predetermined variables of the two oil crops.

The supply equations of the two oil crops are summarized by substituting equations (7-9), (7-10), (7-12), and (7-13) into equation (7-5).

$$\begin{aligned}
QD_{Sit} &= QDF_{Sit} + QDL_{Sit} \\
&\quad + QDP_{Sit-1} \frac{QD_{Sit}}{QD_{Sit-1}} + QDS_{Sit-1} \frac{Q_{Sit}}{Q_{Sit-1}} \\
&\quad + QDW_{Sit-1} \frac{QD_{Sit}}{QD_{Sit-1}} + QDO_{Sit-1} \frac{GDP_t}{GDP_{t-1}} \\
&\quad + QDX_{Sit} \\
&= QDF_{Sit} + QDL_{Sit} \\
&\quad + \frac{QDP_{Sit-1} + QDW_{Sit-1}}{QD_{Sit-1}} QD_{Sit} \\
&\quad + QDS_{Sit-1} \frac{Q_{Sit}}{Q_{Sit-1}} \\
&\quad + QDO_{Sit-1} \frac{GDP_t}{GDP_{t-1}} + QDX_{Sit} \\
&\quad \frac{QD_{Sit-1} - QDP_{Sit-1} - QDW_{Sit-1}}{QD_{Sit-1}} QD_{Sit} \\
&= QDF_{Sit} + QDL_{Sit} + QDS_{Sit-1} \frac{Q_{Sit}}{Q_{Sit-1}} \\
&\quad + QDO_{Sit-1} \frac{GDP_t}{GDP_{t-1}} + QDX_{Sit} \\
QD_{Sit} &= \frac{QD_{Sit-1}}{QD_{Sit-1} - QDP_{Sit-1} - QDW_{Sit-1}} \\
&\quad \times \left(QDF_{Sit} + QDL_{Sit} + QDS_{Sit-1} \frac{Q_{Sit}}{Q_{Sit-1}} \right. \\
&\quad \left. + QDO_{Sit-1} \frac{GDP_t}{GDP_{t-1}} + QDX_{Sit} \right)
\end{aligned} \tag{7-17}$$

3. Supply and demand of vegetable oils

The vegetable oils incorporated into this model are of the two oil classifications: soybean oil (*OS*) and other vegetable oils (*OX*). Vegetable oil *O_i* is investigated in this section.

Production of vegetable oil is a process supply of the oil crop multiplied using the coefficient shown below.

$$Q_{Oit} = c_{Oit} QD_{Sit-1} \tag{8-1}$$

Therein, QD_{Sit} is the supply of oil crop *O_i*. If *O_i* is *OS*, then *S_i* is *SB*. If *O_i* is *OX*, then *S_i* is *XS*.

The parameter c_{OS} is around 0.18. It is slightly different by country and year. However, c_{OX} exceeds one in many countries. Therefore, the weight of the produced oil is heavier than the raw material. Although the cause is unclear, the parameters calculated from data of the FAOSTAT are used in this model.

The simulation results obtained using equation (8-1) are not good. Therefore, the following equation, which is the same as that in the IFPSIM, is used in the simulation.

$$Q_{Oit} = Q_{Oit-1} \frac{QD_{Sit}}{QD_{Sit-1}} \tag{8-2}$$

Therein, QD_{Sit} is the supply of oil crop *O_i*.

$$QD_{Oit} = Q_{Oit} - NEX_{Oit} - STC_{Oit}, \tag{8-3}$$

where NEX_{Oit} denotes net exports and STC_{Oit} represents the stock change.

The net exports are obtained from identity (8-3) as

$$NEX_{Oit} = Q_{Oit} - QD_{Oit} - STC_{Oit}. \tag{8-4}$$

The stock change of the oil crop is calculated using the following equation just as it was for oil crops.

$$STC_{Oit} = STC_{Oit-1} \frac{Q_{Oit} - Q_{Oit-1}}{Q_{Oit-1} - Q_{Oit-2}} \tag{8-5}$$

The supply of vegetable oil *i* is obtained from the following identity.

$$QD_{Oit} = QDF_{Oit} + QDW_{Oit} + QDP_{Oit} + QDO_{Oit} + QDX_{Oit} \tag{8-6}$$

Therein, the variables are the same as those used for oil crops. However, seed demand of vegetable oil has been deleted because that value is apparently zero.

The food demand function of vegetable oil *O_i* is specified as the following linear function for simplification in this section.

$$QDF_{Oit} = \gamma_{0Oi} + \sum_l \gamma_{Oi,l} P_l + \gamma_{MOi} \frac{GDP_t}{POP_t} \tag{8-7}$$

Therein, *l* represents the 18 food goods in this model.

The quantity of vegetable oil waste is obtained as

$$QDW_{Oit} = QDW_{Oit-1} \frac{QD_{Oit}}{QD_{Oit-1}}. \tag{8-8}$$

The rate of increase of supply of vegetable oil is assumed to be equal to that of the total supply.

The process supply of the vegetable oil is calculated as

$$QDP_{Oit} = QDP_{Oit-1} \frac{QD_{Oit}}{QD_{Oit-1}}. \tag{8-9}$$

The rates of increase of the supply of oil for process are assumed to be equal to that of the total supply.

The other use of vegetable oil is calculated as

$$QDO_{Oit} = QDO_{Oit-1} \frac{GDP_t}{GDP_{t-1}}. \quad (8-10)$$

The rate of increase of the other use of vegetable oil is assumed to be equal to that of GDP.

Substituting equations (8-8)–(8-10) into equation (8-6) yields the equations shown below.

$$\begin{aligned} QD_{Oit} &= QDF_{Oit} \\ &+ QDW_{Oit-1} \frac{QD_{Oit}}{QD_{Oit-1}} + QDP_{Oit-1} \frac{QD_{Oit}}{QD_{Oit-1}} \\ &+ QDO_{Oit-1} \frac{GDP_t}{GDP_{t-1}} + QDX_{Oit} \\ QDF_{Oit} &= QD_{Oit} - QDW_{Oit-1} \frac{QD_{Oit}}{QD_{Oit-1}} \\ &- QDP_{Oit-1} \frac{QD_{Oit}}{QD_{Oit-1}} \\ &- QDO_{Oit-1} \frac{GDP_t}{GDP_{t-1}} - QDX_{Oit} \\ &= \left(1 - \frac{QDW_{Oit-1}}{QD_{Oit-1}} - \frac{QDP_{Oit-1}}{QD_{Oit-1}} \right) QD_{Oit} \\ &- QDO_{Oit-1} \frac{GDP_t}{GDP_{t-1}} - QDX_{Oit} \end{aligned} \quad (8-11)$$

Substituting equation (8-3) into (8-11) produces the equations shown below.

$$\begin{aligned} QDF_{Oit} &= \left(1 - \frac{QDW_{Oit-1}}{QD_{Oit-1}} - \frac{QDP_{Oit-1}}{QD_{Oit-1}} \right) \\ &\times (Q_{Oit} - NEX_{Oit} - STC_{Oit}) \\ &- QDO_{Oit-1} \frac{GDP_t}{GDP_{t-1}} - QDX_{Oit} \end{aligned} \quad (8-12)$$

Substituting the food demand function (8-7) and production equation (8-2) into (8-12) produces the equation shown below.

$$\begin{aligned} \gamma_{0Oi} + \sum_l \gamma_{Oi,l} P_{lt} \\ &= \left(1 - \frac{QDW_{Oit-1}}{QD_{Oit-1}} - \frac{QDP_{Oit-1}}{QD_{Oit-1}} \right) \\ &\times \frac{Q_{Oit-1}}{QD_{Sit-1}} QD_{Sit} \\ &+ \left(1 - \frac{QDW_{Oit-1}}{QD_{Oit-1}} - \frac{QDP_{Oit-1}}{QD_{Oit-1}} \right) \\ &\times (-NEX_{Oit} - STC_{Oit}) \\ &- QDO_{Oit-1} \frac{GDP_t}{GDP_{t-1}} - QDX_{Oit} - \gamma_{MOi} \frac{GDP_t}{POP_t} \end{aligned} \quad (8-13)$$

The left side of equation (8-13) includes prices of the 18 food goods. The quantities on the right side are exogenous variables and predetermined variables of the two vegetable oils.

The supply equations of the two vegetable oils are summarized for convenience by substituting equation (8-2) into equation (8-11).

$$\begin{aligned} &\left(1 - \frac{QDW_{Oit-1}}{QD_{Oit-1}} - \frac{QDP_{Oit-1}}{QD_{Oit-1}} \right) QD_{Oit} \\ &= QDF_{Oit} + QDO_{Oit-1} \frac{GDP_t}{GDP_{t-1}} + QDX_{Oit} \\ QD_{Oit} &= \frac{QD_{Oit-1}}{QD_{Oit-1} - QDW_{Oit-1} - QDP_{Oit-1}} \\ &\times \left[QDF_{Oit} + QDO_{Oit-1} \frac{GDP_t}{GDP_{t-1}} + QDX_{Oit} \right] \end{aligned} \quad (8-14)$$

The vegetable oil food demand and oil crop supply are necessary to calculate the vegetable oil supply.

4. Supply and demand of oil cakes

The oil cakes in this model consist of the following two oil cake classifications: soybean cake (CS) and other oil cakes (CX). Oil cake C_i is investigated in this section.

Production of oil cake is a process supply of the oil crop multiplied by a coefficient as shown below.

$$Q_{C_{it}} = (1 - c_{it} - x_{it}) QD_{S_{it-1}} \quad (9-1)$$

Therein, $QD_{S_{it}}$ is the oil crop supply. If C_i is CS, then S_i is SB. If C_i is CX, then S_i is XS. In addition, c_{it} is the rate of oil production from oil crop O_i ; x_{it} is an adjustment factor.

Substituting equation (8-1) for vegetable oil production into equation (9-1) produces the equation shown below.

$$Q_{C_{it}} = (1 - x_{it}) QD_{S_{it-1}} - Q_{Oit} \quad (9-2)$$

Variables Q_{Oit} denote the vegetable oil production from oil crop O_i . Adjustment factor x_{it} absorbs the shock if parameter c_{it} exceeds one.

The demand of oil cakes is found using the following feed input demand of livestock products as

$$QDL_{C_{ijt}} = \delta_{0C_{ij}} + \delta_{C_{ij},j} P_{jt} + \sum_k \delta_{C_{ij},k} P_{kt} \quad (9-3)$$

where k represents feed crops and cakes, i.e., RI, WH, MZ, XG, SB, XS, CS, CX, and where j represents livestock products BF, SH, PK, PM, XM, EG, and MK.

The aggregated feed demand is shown below.

$$\begin{aligned} QDL_{C_{it}} &= \sum_j QDL_{C_{ijt}} \\ &= \sum_j \delta_{0C_{ij}} + \sum_j \delta_{C_{ij},j} P_{jt} + \sum_j \sum_k \delta_{C_{ij},k} P_{kt} \end{aligned} \quad (9-4)$$

The other uses of oil cake are calculated using the following equation.

$$QDO_{Cit} = QDO_{Cit-1} \frac{GDP_t}{GDP_{t-1}} \quad (9-5)$$

The rates of increase of the other use of oil cake are assumed to be equal to that of GDP.

The supply identity of oil cakes is

$$QD_{Cit} = Q_{Cit} - NEX_{Cit} - STC_{Cit}. \quad (9-6)$$

Furthermore, the supply of oil cakes includes feed demand, other uses, and statistical error as

$$QD_{Cit} = QDL_{Cit} + QDO_{Cit} + QDX_{Cit}. \quad (9-7)$$

Substituting identity (9-6) into the other identity (9-7) yields the following equation for feed demand.

$$QDL_{Cit} = Q_{Cit} - NEX_{Cit} - STC_{Cit} - QDO_{Cit} - QDX_{Cit} \quad (9-8)$$

If the oil cake production equation (9-1), the feed demand function (9-3), and other use equation (9-5) are substituted into equation (9-8), then the following function is obtained.

$$\begin{aligned} & \sum_j \delta_{0Cij} + \sum_j \delta_{Cij,j} P_{jt} + \sum_j \sum_k \delta_{Cij,k} P_{kt} \\ & = (1 - c_{it} - x_{it}) QDP_{Sit} - NEX_{Cit} - STC_{Cit} \\ & - QDO_{Cit-1} \frac{GDP_t}{GDP_{t-1}} - QDX_{Cit} \end{aligned} \quad (9-9)$$

The left side of equation (9-9) includes prices of four grains, two oil crops, two oil cakes, and seven livestock products. The right side of this equation includes the predetermined endogenous variables, exogenous variables, and the process supply of the oil crop.

The supply equations of the two oil cakes are summarized by substituting equation (9-5) into equation (9-7) for convenience.

$$QD_{Cit} = QDL_{Cit} + QDO_{Cit-1} \frac{GDP_t}{GDP_{t-1}} + QDX_{Cit} \quad (9-10)$$

5. Supply and demand of meats and eggs

Meats and eggs in this model include the following six livestock products: beef (*BF*), mutton (*SH*), pork (*PK*), poultry meat (*PM*), other meats (*XM*), and poultry eggs (*EG*). Meats and eggs *Mi* is investigated as described in this section.

Production of meats and eggs is the yield multiplied by the number of head of the livestock as

$$Q_{Mit} = Y_{Mit} H_{Mit}, \quad (10-1)$$

where Y_{Mit} is the weight of meats or eggs per head and H_{Mit} is the number of slaughtered head animals or the number of hens.

The supply equation of meats or eggs is

$$QD_{Mit} = Q_{Mit} - NEX_{Mit} - STC_{Mit}, \quad (10-2)$$

where NEX_{Mit} represents net exports and STC_{Mit} stands for the stock change.

The net exports are obtained from identity (10-2).

$$NEX_{Mit} = Q_{Mit} - QD_{Mit} - STC_{Mit} \quad (10-3)$$

The stock change of the meats or eggs is calculated using the following equation similarly to other agricultural products.

$$STC_{Mit} = STC_{Mit-1} \frac{Q_{Mit} - Q_{Mit-1}}{Q_{Mit-1} - Q_{Mit-2}} \quad (10-4)$$

It is assumed that the change in the rate of increase of stock is equal to that of the rate of increased production.

The supply of meats and eggs *Mi* is obtained from the following identity.

$$QD_{Mit} = QDF_{Mit} + QDL_{Mit} + QDW_{Mit} + QDP_{Mit} + QDO_{Mit} + QDX_{Mit} \quad (10-5)$$

As shown there, QDF_{Mit} expresses food demand, QDL_{Mit} signifies feed demand, QDW_{Mit} represents waste, QDP_{Mit} denotes process demand, QDO_{Mit} denotes other use, and QDX_{Mit} stands for error in the FAOSTAT.

For simplification, the food demand function of meats and eggs *Mi* is specified in this section as the following linear function.

$$QDF_{Mit} = \gamma_{0Mi} + \sum_l \gamma_{Mi,l} P_{lt} + \gamma_{Mt} \frac{GDP_t}{POP_t} \quad (10-6)$$

In that equation, l is the 18 food goods used in this model.

The feed supply of meats and eggs is obtained using the following equation, but the case in which meats or eggs are feed for other livestock production is rare.

$$QDL_{Mit} = QDL_{Mit-1} \frac{QD_{Mit}}{QD_{Mit-1}} \quad (10-7)$$

The rates of increased feed supply of meats and eggs are assumed to be equal to that of the total supply.

The quantity of waste of meats and eggs is obtained as shown below.

$$QDW_{Mit} = QDW_{Mit-1} \frac{QD_{Mit}}{QD_{Mit-1}} \quad (10-8)$$

The rate of increase in the supply of meats and eggs is assumed to be equal to that of the total supply.

The process supply of the meats and eggs is calculated using the following equation.

$$QDP_{Mit} = QDP_{Mit-1} \frac{GDP_t}{GDP_{t-1}} \quad (10-9)$$

The rates of increase rates of supply of meats and eggs for process are assumed to be equal to that of GDP. Meats used for process food production are few in the FAOSTAT.

The other use of meats and eggs is calculated as

$$QDO_{Mit} = QDO_{Mit-1} \frac{GDP_t}{GDP_{t-1}}.$$

(10-10)

The rates of increase of the other use of meats and eggs are assumed to be equal to that of GDP.

A reduced form equation is producible using other equations. Substituting equations (10-7)–(10-10) into identity (10-5) yields the following equation.

$$\begin{aligned}
QD_{Mit} &= QDF_{Mit} \\
&+ (QDL_{Mit-1} + QDW_{Mit-1}) \frac{QD_{Mit}}{QD_{Mit-1}} \\
&+ (QDP_{Mit-1} + QDO_{Mit-1}) \frac{GDP_t}{GDP_{t-1}} \\
&+ QDX_{Mit} \quad (10-11)
\end{aligned}$$

Solving for food demand yields the following equation.

$$\begin{aligned}
QDF_{Mit} &= QD_{Mit} \\
&- (QDL_{Mit-1} + QDW_{Mit-1}) \frac{QD_{Mit}}{QD_{Mit-1}} \\
&- (QDP_{Mit-1} + QDO_{Mit-1}) \frac{GDP_t}{GDP_{t-1}} - QDX_{Mit} \\
QDF_{Mit} &= \left(1 - \frac{QDL_{Mit-1} + QDW_{Mit-1}}{QD_{Mit-1}} \right) QD_{Mit} \\
&- (QDP_{Mit-1} + QDO_{Mit-1}) \frac{GDP_t}{GDP_{t-1}} - QDX_{Mit} \quad (10-12)
\end{aligned}$$

Substituting (10-2) into the equation produces the equation shown below.

$$\begin{aligned}
QDF_{Mit} &= \left(1 - \frac{QDL_{Mit-1} + QDW_{Mit-1}}{QD_{Mit-1}} \right) \\
&\times (Q_{Mit} - NEX_{Mit} - STC_{Mit}) \\
&- (QDP_{Mit-1} + QDO_{Mit-1}) \frac{GDP_t}{GDP_{t-1}} - QDX_{Mit} \quad (10-13)
\end{aligned}$$

By substituting demand function (10-6) into equation (10-13), the following reduced form of the equation is obtained.

$$\begin{aligned}
\gamma_{0Mi} + \sum_l \gamma_{Mi,l} P_{li} \\
= \left(1 - \frac{QDL_{Mit-1} + QDW_{Mit-1}}{QD_{Mit-1}} \right) \\
\times (Q_{Mit} - NEX_{Mit} - STC_{Mit}) \\
- (QDP_{Mit-1} + QDO_{Mit-1}) \frac{GDP_t}{GDP_{t-1}} \\
- QDX_{Mit} - \gamma_{Mi} \frac{GDP_t}{POP_t} \quad (10-14)
\end{aligned}$$

The left side of equation (10-14) includes the prices of the 18 food goods. The right side of this equation comprises the predetermined endogenous variables and the exogenous variables.

The supply equations of the five meats and one egg are summarized by solving the supply of equation (10-12).

$$\begin{aligned}
&\left(1 - \frac{QDL_{Mit-1} + QDW_{Mit-1}}{QD_{Mit-1}} \right) QD_{Mit} \\
&= QDF_{Mit} + (QDP_{Mit-1} + QDO_{Mit-1}) \frac{GDP_t}{GDP_{t-1}} + QDX_{Mit} \\
QD_{Mit} &= \frac{QD_{Mit-1}}{QD_{Mit-1} - QDL_{Mit-1} - QDW_{Mit-1}} \\
&\times \left[QDF_{Mit} + (QDP_{Mit-1} + QDO_{Mit-1}) \frac{GDP_t}{GDP_{t-1}} \right. \\
&\quad \left. + QDX_{Mit} \right] \quad (10-15)
\end{aligned}$$

6. Supply and demand of raw milk

Raw milk (MK) is investigated as described in this section. Production of raw milk is the yield multiplied by the number of cows as

$$Q_{MKt} = Y_{MKt} H_{MKt}, \quad (11-1)$$

where Y_{MKt} represents the weight of raw milk and H_{MKt} signifies the number of cows.

The supply equation of raw milk is

$$QD_{MKt} = Q_{MKt} - NEX_{MKt} - STC_{MKt}, \quad (11-2)$$

where NEX_{MKt} represents net exports and STC_{MKt} denotes the stock change.

The net exports are obtained from identity (11-2) as

$$NEX_{MKt} = Q_{MKt} - QD_{MKt} - STC_{MKt}. \quad (11-3)$$

The stock change of raw milk is calculated using the following equation similarly to other agricultural products.

$$STC_{MKt} = STC_{MKt-1} \frac{Q_{MKt} - Q_{MKt-1}}{Q_{MKt-1} - Q_{MKt-2}} \quad (11-4)$$

The rate of increase of the stock change is assumed to be equal to that of the rate of increase in change in production. The quantity of the ending stock is small because raw milk is perishable.

The raw milk supply is obtained from the following identity.

$$\begin{aligned}
QD_{MKt} &= QDF_{MKt} + QDL_{MKt} + QDW_{MKt} \\
&+ QDP_{MKt} + QDO_{MKt} + QDX_{MKt} \quad (11-5)
\end{aligned}$$

Therein, QDF_{MKt} represents food demand, QDL_{MKt} is feed demand, QDW_{MKt} expresses waste, QDP_{MKt} signifies process demand, QDO_{MKt} denotes other use, and QDX_{MKt} stands for error in the FAOSTAT.

In this sense, for simplification, the food demand function of raw milk is specified as the following linear function.

$$\begin{aligned}
QDF_{MKt} &= \gamma_{0MK} + \sum_l \gamma_{MK,l} P_{li} + \gamma_{MK} \frac{GDP_t}{POP_t} \quad (11-6)
\end{aligned}$$

Therein, l represents the 18 food goods in this model.

The feed supply of raw milk is obtained as

$$QDL_{MKt} = QDL_{MKt-1} \frac{QD_{MKt}}{QD_{MKt-1}}. \quad (11-7)$$

Rates of increase of the feed supply of raw milk are assumed as equal to that of the total supply. The quantity of raw milk for feed is large, although cases in which meats are feed for other livestock production are rare.

The quantity of waste of raw milk is obtained as

$$QDW_{MKt} = QDW_{MKt-1} \frac{QD_{MKt}}{QD_{MKt-1}}. \quad (11-8)$$

The rate of increase in the supply of raw milk is assumed to be equal to that of the total supply.

Next, the demand function is set for raw milk for dairy products Di in this model, which includes skimmed milk (SK), butter (BT), and cheese (CH). The input demand function of raw milk of these dairy products is specified as the following linear functions.

$$QDP_{MK,Di} = \zeta_{0MKDi} + \zeta_{MKDi,Di} P_{Di} + \zeta_{MKDi,MK} P_{MKt} \quad (11-9)$$

The price of the dairy products and the price of raw milk are variables of the input demand function. Labor and capital inputs are omitted for simplification.

The total process demand of raw milk is obtained by summation for Di of (11-9) as

$$QDP_{MKt} = \sum_{Di} \zeta_{0MKDi} + \sum_{Di} \zeta_{MKDi,Di} P_{Di} + \sum_{Di} \zeta_{MKDi,MK} P_{MKt}. \quad (11-10)$$

The other use of raw milk is calculated using the following equation.

$$QDO_{MKt} = QDO_{MKt-1} \frac{GDP_t}{GDP_{t-1}} \quad (11-11)$$

The rates of increase of the other use of raw milk are assumed to be equal to that of GDP.

Substituting equations (11-7), (11-8), and (11-11) into equation (11-5) produces the equation shown below.

$$\begin{aligned} QDF_{MKt} + QDP_{MKt} &= QD_{MKt} - QDL_{MKt} \\ &\quad - QDW_{MKt} - QDO_{MKt} - QDX_{MKt} \\ &= QD_{MKt} - QDL_{MKt-1} \frac{QD_{MKt}}{QD_{MKt-1}} \\ &\quad - QDW_{MKt-1} \frac{QD_{MKt}}{QD_{MKt-1}} \\ &\quad - QDO_{MKt-1} \frac{GDP_t}{GDP_{t-1}} - QDX_{MKt} \\ &= \left(1 - \frac{QDL_{MKt-1} + QDW_{MKt-1}}{QD_{MKt-1}} \right) QD_{MKt} \\ &\quad - QDO_{MKt-1} \frac{GDP_t}{GDP_{t-1}} - QDX_{MKt} \end{aligned} \quad (11-12)$$

It is possible to set a reduced form equation of raw milk

supply and demand. Substituting the food demand function (11-6), input demand function of production of dairy products (11-10), and the supply equation (11-2) into equation (11-12) yields the equation below.

$$\begin{aligned} &\gamma_{0MK} + \sum_l \gamma_{MK,l} P_{lt} \\ &\quad + \sum_{Di} \zeta_{0MKDi} + \sum_{Di} \zeta_{MKDi,Di} P_{Di} \\ &\quad + \sum_{Di} \zeta_{MKDi,MK} P_{MKt} \\ &= \left(1 - \frac{QDL_{MKt-1} + QDW_{MKt-1}}{QD_{MKt-1}} \right) \\ &\quad \times (Q_{MKt} - NEX_{MKt} - STC_{MKt}) \\ &\quad - QDO_{MKt-1} \frac{GDP_t}{GDP_{t-1}} - QDX_{MKt} + \gamma_{MK} \frac{GDP_t}{POP_t} \end{aligned} \quad (11-13)$$

The left side of this equation includes the prices of the 18 food goods. The right side of this equation has predetermined endogenous variables and exogenous variables.

The supply equation of raw milk is summarized by solving the supply of equation (11-13).

$$\begin{aligned} &\left(1 - \frac{QDL_{MKt-1} + QDW_{MKt-1}}{QD_{MKt-1}} \right) QD_{MKt} \\ &= QDF_{MKt} + QDP_{MKt} \\ &\quad + QDO_{MKt-1} \frac{GDP_t}{GDP_{t-1}} + QDX_{MKt} \\ QD_{MKt} &= \frac{QD_{MKt-1}}{QD_{MKt-1} - QDL_{MKt-1} - QDW_{MKt-1}} \\ &\quad \times \left[QDF_{MKt} + QDP_{MKt} \right. \\ &\quad \left. + QDO_{MKt-1} \frac{GDP_t}{GDP_{t-1}} + QDX_{MKt} \right] \end{aligned} \quad (11-14)$$

7. Supply and demand of dairy products

This model covers the following three dairy products: skimmed milk (SK), butter (BT), and cheese (CH). The conversion rates to raw milk of these dairy products are presented in Table 3-1.

Dairy products are produced from raw milk through processing by separation, fermentation, and condensation. All raw milk in this model is assumed to be used for the processing and production of skimmed milk, butter, or cheese. Dairy products Di are investigated as explained in this section.

Table 3-1. Conversion rates of raw milk to dairy products.

Dairy product	Variable name	Conversion rate
Raw milk	C_{MK}	1.00
Skimmed milk	C_{SK}	6.48
Butter	C_{BT}	12.34
Cheese	C_{CH}	12.66

Source: Japan Dairy Industry Yearbook, 2018

The production of dairy products Di is obtained using the quantity of raw milk for processing multiplied by the following conversion rate.

$$Q_{Di} = (1/C_{Di}) Q_{DMK_i} \quad (12-1)$$

The supply equation of dairy products Di is

$$Q_{D_{Di}} = Q_{Di} - NEX_{Di} - STC_{Di}. \quad (12-2)$$

Therein, NEX_{Di} denotes net exports; STC_{Di} is the stock change.

The net exports are obtained from identity (12-2) as

$$NEX_{Di} = Q_{Di} - Q_{D_{Di}} - STC_{Di}. \quad (12-3)$$

The stock change of the dairy products is calculated similarly to other agricultural products using the following equation.

$$STC_{Di} = STC_{Di-1} \frac{Q_{Di} - Q_{Di-1}}{Q_{Di-1} - Q_{Di-2}} \quad (12-4)$$

The rate of increase of the stock change is assumed to be equal to that of the rate of increase of the changes in production.

The supply of dairy products is obtained from the following identity.

$$Q_{D_{Di}} = QDF_{Di} + QDL_{Di} + QDW_{Di} + QDO_{Di} + QDX_{Di} \quad (12-5)$$

In that equation, QDF_{Di} signifies food demand, QDL_{Di} stands for feed demand, QDW_{Di} denotes waste, QDO_{Di} expresses other use, and QDX_{Di} is the error term reflecting error in the FAOSTAT.

For simplicity, the food demand function of the dairy products is specified as the following linear function for this section.

$$QDF_{Di} = \gamma_{0,Di} + \sum_l \gamma_{Di,l} P_{lt} + \gamma_{Di} \frac{GDP_t}{POP_t} \quad (12-6)$$

Therein, l denotes the 18 food goods in this model.

The feed supply of the dairy products is obtained as

$$QDL_{Di} = QDL_{Di-1} \frac{Q_{D_{Di}}}{Q_{D_{Di-1}}}. \quad (12-7)$$

The rates of increase of the feed supply of the dairy products are assumed to be equal to that of the total supply. Skimmed milk is used as feed in many countries. Butter is used only rarely as feed in some countries.

The quantity of waste of dairy products is obtained as shown below.

$$QDW_{Di} = QDW_{Di-1} \frac{Q_{D_{Di}}}{Q_{D_{Di-1}}} \quad (12-8)$$

The rate of increase of the supply of the dairy products is assumed to be equal to that of the total supply.

The other use of dairy products is calculated as

$$QDO_{Di} = QDO_{Di-1} \frac{GDP_t}{GDP_{t-1}}. \quad (12-9)$$

The rate of increase of the other use of the dairy products is assumed to be equal to that of GDP.

A reduced form of the equation of dairy products can be made. By substituting (12-7)–(12-9) into equation (12-5), the following equation is obtained.

$$\begin{aligned} QDF_{Di} &= Q_{D_{Di}} - QDL_{Di} - QDW_{Di} - QDO_{Di} - QDX_{Di} \\ &= Q_{D_{Di}} \\ &\quad - QDL_{Di-1} \frac{Q_{D_{Di}}}{Q_{D_{Di-1}}} - QDW_{Di-1} \frac{Q_{D_{Di}}}{Q_{D_{Di-1}}} \\ &\quad - QDO_{Di-1} \frac{GDP_t}{GDP_{t-1}} - QDX_{Di} \\ &= \left(1 - \frac{QDL_{Di-1} + QDW_{Di-1}}{Q_{D_{Di-1}}} \right) Q_{D_{Di}} \\ &\quad - QDO_{Di-1} \frac{GDP_t}{GDP_{t-1}} - QDX_{Di} \end{aligned} \quad (12-10)$$

Substituting the food demand function (12-6) and the supply equation (12-2) into equation (12-10), the following equation is obtained.

$$\begin{aligned} &\gamma_{0,Di} + \sum_l \gamma_{Di,l} P_{lt} \\ &= \left(1 - \frac{QDL_{Di-1} + QDW_{Di-1}}{Q_{D_{Di-1}}} \right) \\ &\quad \times (Q_{Di} - NEX_{Di} - STC_{Di}) \\ &\quad - QDO_{Di-1} \frac{GDP_t}{GDP_{t-1}} - QDX_{Di} - \gamma_{Di} \frac{GDP_t}{POP_t} \end{aligned} \quad (12-11)$$

The left side of this equation includes the prices of the 18 food goods. The right side of this equation comprises predetermined endogenous variables and exogenous variables.

The dairy product supply equation is summarized by solving the supply of equation (12-10).

$$\begin{aligned} &\left(1 - \frac{QDL_{Di-1} + QDW_{Di-1}}{Q_{D_{Di-1}}} \right) Q_{D_{Di}} = QDF_{Di} \\ &\quad + QDO_{Di-1} \frac{GDP_t}{GDP_{t-1}} + QDX_{Di} \end{aligned}$$

$$QD_{Dit} = \frac{QD_{Dit-1}}{QD_{Dit-1} - QDL_{Dit-1} - QDW_{Dit-1}} \times \left(QDF_{Dit} + QDO_{Dit-1} \frac{GDP_t}{GDP_{t-1}} + QDX_{Dit} \right) \tag{12-12}$$

8. Calculation routine

Table 3-2 shows the calculation routine, functions and corresponding equation numbers. Before starting of the routine, yields of crops and productions of livestock per head are calculated according to the yield functions.

Derivation of yield functions of cereals and oil crops are written in the next chapter. Yield functions of meats, egg, and raw milk are estimated linearly using only the time trend.

In the yearly loop, first, planted areas of crops and the number of head of livestock are estimated. These are equivalent to the supply functions. Production of the crops

and the livestock products is calculated using the estimated yields and the areas or the number of head of livestock. Supply of vegetable oils, oil cakes, and dairy products are estimated directly using by the supply functions. These area or head functions and supply functions are specified as the adaptive expectation model. The explanatory variables are the area, number of animals, supply quantities, and output prices of the prior year.

In the price convergence loop, food demand, feed demand, supply, production of dairy products, stock changes, net exports, and equilibrium prices are calculated in the iteration for the convergence.

After exiting the convergence loop, seeds, processes, other uses, and wastes are calculated using the obtained supply and production values.

Figure 3-1 portrays a flowchart of the crop sector. The macroeconomic and climate variables are exogenous variables. Feed demand is determined in the livestock sector.

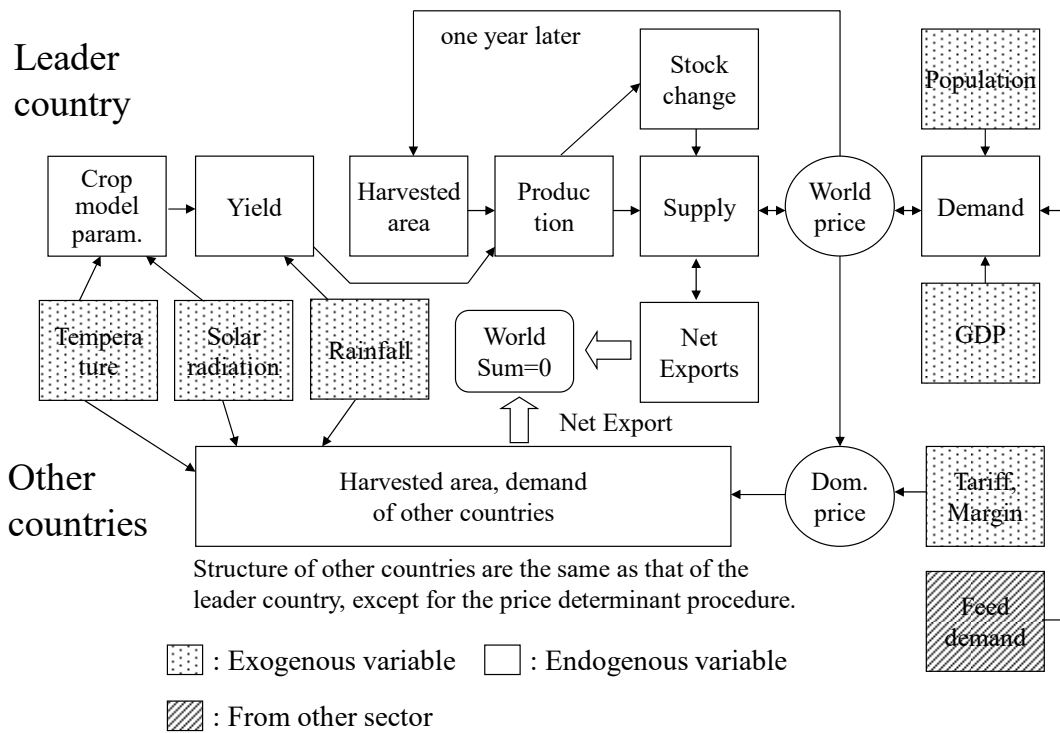


Figure 3-1. Flowchart of the crop sector.

Table 3-2. Calculation routine and functions.

Routine and function	Equation no.
Yield of grains: $Y_{Gi} = f(\text{climate variables, etc. for the crop model, } GDP_t, POP_t)$	(13-46), (13-47)
Yield of oil crops: $Y_{Si} = f(\text{climate variables, etc. for the crop model, } GDP_t, POP_t)$	(13-46), (13-47)
Yield of meats and egg: $Y_{Mi} = f(\text{time trend})$, Yield of raw milk: $Y_{MK} = f(\text{time trend})$	
Year loop	
Planted area function of grains: $A_{Gi} = f(A_{Gi-1}, p_{Ri-1}, p_{WH-1}, p_{MZ-1}, p_{XG-1}, p_{SB-1}, p_{XS-1})$	(1-41)
Planted area function of oil crops: $A_{Si} = f(A_{Si-1}, p_{Ri-1}, p_{WH-1}, p_{MZ-1}, p_{XG-1}, p_{SB-1}, p_{XS-1})$	(1-41)
Slaughtered head and hen function: $H_{Mi} = f(H_{Mi-1}, p_{Ri-1}, p_{WH-1}, p_{MZ-1}, p_{XG-1}, p_{SB-1}, p_{XS-1}, p_{CS-1}, p_{CX-1})$	(2-19)
Cow head function: $H_{MKi} = f(H_{MKi-1}, p_{Ri-1}, p_{WH-1}, p_{MZ-1}, p_{XG-1}, p_{SB-1}, p_{XS-1}, p_{CS-1}, p_{CX-1})$	(2-19)
Production of grains: $Q_{Gi} = Y_{Gi} A_{Gi}$, Production of oil crops: $Q_{Si} = Y_{Si} A_{Si}$	(6-1), (7-1)
Production of meats and egg: $Q_{Mi} = Y_{Mi} H_{Mi}$, Production of milk: $Q_{MKi} = Y_{MKi} H_{MKi}$	(10-1), (11-1)
Supply function for oil: $Q_{Oi} = f(Q_{Oi-1}, p_{Oi-1}, p_{Si-1})$	(3-22)
Supply function for cake: $Q_{Ci} = f(Q_{Ci-1}, p_{Ci-1}, p_{Si-1})$	(3-23)
Supply function for dairy products: $Q_{Di} = f(Q_{Di-1}, p_{Di-1}, p_{MKi-1})$	(4-18)
International equilibrium price recalculation loop	
Goods loop for the 20 commodities, Gauss-Seidel iteration	
International price loop for the 140 countries	
Domestic price (p_i): International price (p_{wi}) + margin	
Food demand: $Q_{DFi} = f_{QDF}(p_{Ri}, \dots, p_{Ch}, GDP_t, POP_t)$	(5-9)
Feed demand: $Q_{DLi} = f_{QDL}(p_{BFi}, \dots, p_{MKi}, p_{Ri}, \dots, p_{CXi})$	(6-9), (7-8), (9-3)
Supply of grains: $Q_{DGi} = f_{QDG}(Q_{DFGi}, Q_{DLGi}, Q_{DXGi}, GDP_t, Q_{DGi-1}, Q_{DSt-1}, Q_{DWSt-1}, Q_{DPSt-1}, Q_{DOST-1}, GDP_{t-1})$	(6-17)
Supply of oil crops: $Q_{DSi} = f_{QDS}(Q_{DFSi}, Q_{DLSi}, Q_{DXSi}, GDP_t, Q_{DSt-1}, Q_{DWSt-1}, Q_{DPSt-1}, Q_{DOST-1}, GDP_{t-1})$	(7-14)
Supply of oils: $Q_{DOi} = f_{QDO}(Q_{DFOi}, Q_{DXOi}, GDP_t, Q_{DOi-1}, Q_{DWi-1}, Q_{DPi-1}, Q_{DOI-1}, GDP_{t-1})$	(8-14)
Supply of cakes: $Q_{DCi} = f_{QDC}(Q_{DLCi}, Q_{DXCi}, GDP_t, Q_{DCi-1}, GDP_{t-1})$	(9-10)
Supply of meats and egg: $Q_{DMi} = f_{QDM}(Q_{DFMi}, Q_{DXMi}, GDP_t, Q_{DMi-1}, Q_{DLMi-1}, Q_{DWMi-1}, Q_{DPMi-1}, Q_{DOMi-1}, GDP_{t-1})$	(10-15)
Supply of milk: $Q_{DMKi} = f_{QDMK}(Q_{DFMKi}, Q_{DPMKi}, Q_{DXMKi}, GDP_t, Q_{DMKi}, Q_{DLMKi-1}, Q_{DWMKi-1}, Q_{DOMKi-1}, GDP_{t-1})$	(11-14)
Supply of dairy products: $Q_{DDi} = f_{QDD}(Q_{DFDi}, Q_{DXDi}, GDP_t, Q_{DDi-1}, Q_{DLDi-1}, Q_{DWDi-1}, Q_{DDi-1}, GDP_{t-1})$	(12-12)
Dairy products production: $Q_{Di} = f(Q_{DMKi})$	(12-1)
Stock change: $STC_{it} = f(STC_{it-1}, Q_{it}, Q_{it-1}, Q_{it-2})$	(6-5), etc.
International price (p_{wi}): equilibrium price of the leader country	
Net exports: $NEX_{it} = f_{NEX}(Q_{it}, Q_{Di}, STC_{it})$	(6-4), etc.
Summation of net exports $> 0 \rightarrow$ decrease in the international price (p_{wi})	
Summation of net exports $< 0 \rightarrow$ increase in the international price (p_{wi})	
Summation of net exports $\approx 0 \rightarrow$ exit from the loop	
End of the international price loop	
End of the goods loop	
Recalculation of food and feed demand using the equilibrium price	
End of recalculation equilibrium price	
Seed demand: $Q_{DSi} = f_{QDS}(Q_{DSi-1}, Q_{it}, Q_{it-1})$	(6-10), etc.
Process demand: $Q_{DPi} = f_{QDP}(Q_{DPi-1}, GDP_t, GDP_{t-1})$	(6-12), etc.
Other use: $Q_{DOI} = f_{QDO}(Q_{DOI-1}, GDP_t, GDP_{t-1})$	(6-13), etc.
Feed demand of livestock products: $Q_{DLi} = f_{QDL}(Q_{DLi-1}, Q_{Di}, Q_{Di-1})$	(12-7), etc.
Wastes: $Q_{DWi} = f_{QDW}(Q_{DWi-1}, Q_{Di}, Q_{Di-1})$	(6-11), etc.
End of year loop	

Chapter 4. Deriving crop yield functions

1. Effects of climate change on crop yields

This model calculates the production of crops, i.e., four grains and two oil crops, by multiplying planted areas by yields. Assessing climate change effects on agricultural production necessitates the use of yield functions.

Climate change is a long-run phenomenon. Increasing temperatures positively affect the lower temperature phase. If temperature exceeds an optimum point, then increasing temperature will negatively affect yields. Therefore, the relation between temperature and yield is expected to represent an inverse U shape.

Furuya and Koyama (2005) estimated macro yield functions using temperature and rainfall data. However, these are specified linearly. The parameters are fixed. To address these shortcomings, they tried to estimate quadratic yield functions considering the dynamic relation between temperature and yield. However, they did not succeed because estimation required data for extremely high temperatures.

To overcome difficulties of relations among yield and climate data, parameters for climate variables are obtained from a crop model (Furuya et al., 2015).

2. Estimation of crop yield trend functions

Recently, crop yields in some countries appear to have hit a ceiling despite widening dissemination of high yield varieties by national and international research institutes (Ray et al., 2012). Considering these circumstances, logistic functions or linear functions with logarithmic time trends are adopted as yield functions.

Removing the effects of climate change in the past, the following functions are estimated as

$$Y_{ik} = a_{ik} + \frac{b_{ik} - a_{ik}}{1 + \exp[-c_{ik}(T - d_{ik})]} + \beta_{TP_{ik}} TP_{ik} + \beta_{RG_{ik}} RG_{ik} + \beta_{PT_{ik}} PT_{ik} + \beta_{GDPP_{ik}} GDPP_{ik} \quad (13-1)$$

where i is an index of crops, k is an index of countries, Y_{ik} is the yield of crop i , a_{ik} stands for the minimum yield, b_{ik} denotes the maximum yield, c_{ik} represents the slope, d_{ik} is the inflection year, T expresses the time trend, e.g., 1961=1, 1962=2, TP_{ik} signifies the monthly average temperature, RG_{ik} is the monthly average of per-day solar radiation, PT_{ik} stands for monthly rainfall, and $GDPP_{ik}$ represents the per-capita GDP. In addition, $GDPP_{ik}$ is a proxy of research investment.

The following linear function is estimated if the fitness of function (13-1) is not good.

$$Y_{ik} = a_{L_{ik}} + b_{L_{ik}} \ln T_L + \beta_{LTP_{ik}} TP_{ik} + \beta_{LRG_{ik}} RG_{ik} + \beta_{LPT_{ik}} PT_{ik} + \beta_{LGDPP_{ik}} GDPP_{ik} \quad (13-2)$$

Therein, T_L represents the time trend, e.g., 1951=1 and 1952=2.

3. Potential yield of the crop model

Temperature and solar radiation elasticities of yield of the crops are calculated using the parameters of a crop model developed by Doorenbos and Kassam (1979). The functions of the biomass and the yield calculation procedure of their crop model are presented in this section. These are written in their paper.

The net biomass is calculated using the following equation.

$$B_n = B_g - R \quad (13-3)$$

Therein, B_n denotes the net biomass production, B_g represents the gross biomass production, and R stands for the respiration loss.

The rate of net biomass production according to the following equation (13-3) as

$$b_n = b_g - r, \quad (13-4)$$

where b_n represents the rate of net biomass production, b_g denotes the rate of gross biomass production, and r stands for the respiration rate.

The maximum rate of net biomass production is the rate at which the crop covers the entire ground surface. The point of maximum growth of the net biomass production is the inflection point of the cumulative growth curve. It is assumed that the average rate of net production b_{na} is half of the maximum rate of net biomass production b_{nm} , as in the following model.

$$b_{na} = 0.5 b_{nm} \quad (13-5)$$

Therefore, the net biomass production for a crop of N days is

$$B_n = 0.5 b_{nm} N. \quad (13-6)$$

The maximum rate of gross production b_{gm} depends on the air temperature, the maximum net rate of CO₂ exchange of leaves, the photosynthesis pathway of the crop, and the atmospheric CO₂ concentration. The maximum net rate of CO₂ exchange of leaves P_m and the leaf area index LAI of a standard crop are shown below.

$$P_m = 20 \text{ kg ha}^{-1} \text{ hr}^{-1} \quad (13-7)$$

$$LAI = 5 \quad (13-8)$$

The maximum rate of gross production b_{gm} is calculated as

$$b_{gm} = F b_o + (1 - F) b_c, \quad (13-9)$$

where F is the rate of covered by cloud of the sky in the daytime, as calculated using the following equation.

$$F = (A_c - 0.5 R_g) / (0.8 A_c) \quad (13-10)$$

In that equation, A_c is the maximum active incoming short-wave radiation on a clear day. In addition, R_g is the incoming short-wave radiation. The units of both variables are cal cm⁻² day⁻¹.

The b_o and the b_c in equation (13-9) are the rates of gross dry matter production of a crop, respectively, on a completely overcast day and on a perfectly clear day. The units of these variables are $\text{kg ha}^{-1} \text{ day}^{-1}$.

The maximum rate of gross production b_{gm} is calculated using the equation below if the maximum net rate of CO_2 exchange of leaves P_m exceeds $20 \text{ kg ha}^{-1} \text{ hr}^{-1}$.

$$b_{gm} = F(0.8 + 0.01 P_m) b_o + (1 - F)(0.5 + 0.025 P_m) b_c \quad (13-11)$$

The maximum rate of gross production b_{gm} is calculated using the following equation if the maximum net rate of CO_2 exchange of leaves P_m is less than $20 \text{ kg ha}^{-1} \text{ hr}^{-1}$:

$$b_{gm} = F(0.5 + 0.025 P_m) b_o + (1 - F)(0.05 P_m) b_c \quad (13-12)$$

The maximum rate of gross production b_{gm} and the maximum respiration rate r_m are necessary for obtaining the maximum rate of net production b_{nm} . The maximum respiration rate r_m is calculated as

$$r_m = k b_{gm} + c_t B_m, \quad (13-13)$$

where k is a proportional constant and c_t represents the relative maintenance respiration rate. In addition, B_m is the accumulated net biomass when the net biomass production rate is the maximum. Herein, the k of beans and other crops are 0.28:

$$k = 0.28. \quad (13-14)$$

However, the relative maintenance respiration rate c_t depends on temperature: it takes different numbers in beans and other crops. The following numbers are taken at 30°C for beans and other crops.

$$c_{30i} = 0.0283 \text{ for } i: SB, XS \quad (13-15)$$

$$c_{30i} = 0.0108 \text{ for } i: RI, WH, MZ, XG \quad (13-16)$$

The relative maintenance respiration rate c_t is obtained using the following function.

$$c_t = c_{30i} (0.0044 + 0.0019t + 0.0010t^2) \quad (13-17)$$

The accumulated net biomass B_m is assumed as half of the net biomass production B_n , as shown below.

$$B_m = 0.5 B_n \quad (13-18)$$

Substituting equation (13-6) into equation (13-18) gives the equation shown below.

$$B_m = 0.25 b_{nm} N \quad (13-19)$$

If the equation of the rate of net biomass production (13-4) is rewritten for the maximum rate of net production b_{nm} , the maximum rate of gross production b_{gm} , and the maximum respiration rate r_m , then the following equation is obtained.

$$b_{nm} = b_{gm} - r_m \quad (13-20)$$

Substituting equation (13-13) into equation (13-20) yields the following equation.

$$b_{nm} = b_{gm} - k b_{gm} - c_t B_m = (1 - k) b_{gm} - c_t B_m \quad (13-21)$$

Substituting equation (13-19) into equation (13-21) gives the equation shown below.

$$b_{nm} = (1 - k) b_{gm} - c_t (0.25 b_{nm} N) \\ (1 + 0.25 c_t N) b_{nm} = (1 - k) b_{gm} \\ b_{nm} = (1 - k) b_{gm} / (1 + 0.25 c_t N) \quad (13-22)$$

Substituting the constant k (13-14) into equation (13-22) gives the equation shown below.

$$b_{nm} = 0.72 b_{gm} / (1 + 0.25 c_t N) \quad (13-22)$$

By substituting equation (13-22) into equation (13-6), the equation of the net biomass production for a crop B_n is obtained. It is explained as the maximum rate of gross production b_{gm} in the case of the LAI is equal to five, days of the growing period N , and the relative maintenance respiration rate c_t .

$$B_n = 0.5 [0.72 b_{gm} / (1 + 0.25 c_t N)] N \\ = 0.36 b_{gm} / (1/N + 0.25 c_t) \quad (13-23)$$

Equation (13-23) shows the net biomass production for a crop B_n for $LAI=5$. However, the real net biomass production for a crop B_n is obtained by multiplying L , which is the rate of the actual LAI to the $LAI=5$. The following equation shows the real net biomass production.

$$B_n = 0.36 b_{gm} L / (1/N + 0.25 c_t) \quad (13-24)$$

Potential yield Y_p is obtained from the real net biomass production for a crop B_n , and the harvest index HI , which is the rate of a biomass of an economically useful crop to the net biomass of the crop.

$$Y_p = HI B_n \quad (13-25)$$

The required variables for estimation of the potential yield are presented below.

- (a) A_c : the maximum active incoming short-wave radiation on a clear day
- (b) R_g : Incoming short-wave radiation
- (c) N : Days of the growing period, i.e., from germination to ripeness
- (d) P_m : Maximum net rate of CO_2 exchange of leaves
- (e) L : Rate of the actual LAI to the $LAI=5$
- (f) HI : Harvest index

4. Example of potential yield calculation

The following example can be calculated.

Crop: rice, Japonica, wetland

Growth cycle: $N=135$ days (May–September)

Input: intermediate

Crop group: C3/II

Harvest index, HI : 0.35

LAI : 4.3, $L=4.3/5=0.86$

P_m : the maximum net rate of CO_2 exchange of leaves ($\text{kg ha}^{-1} \text{ hr}^{-1}$): 0 (5°C), 5 (10°C), 15 (15°C), 30 (20°C), 35 (25°C), 35 (30°C), 30 (35°C), 5 (40°C), and 0 (45°C)

The linear approximation function of the P_m to the temperature band is shown below.

$$P_m = -5 + t(5-10^\circ\text{C})$$

$$P_m = -5 + 2t(10-15^\circ\text{C})$$

$$P_m = -30 + 3t(15-20^\circ\text{C})$$

$$P_m = +10 + t(20-25^\circ\text{C})$$

$$P_m = +35 (25-30^\circ\text{C})$$

$$P_m = +65 - t (30-35^\circ\text{C})$$

Therein, t represents the air temperature.

R_g : Incoming short-wave radiation in Niigata, Japan in 1997 (cal cm⁻² day⁻¹)

$$R_g: \text{Average from May-September, } 398.8 \\ (16.69 \text{ MJ m}^{-2} \text{ day}^{-1})$$

A_c : Maximum active incoming short-wave radiation on a clear day (cal cm⁻² day⁻¹) is the following (Doorenbos and Kassam (1979), FAO Irrigation & Drainage Paper 33, P9):

$$A_c: \text{Average of May-September, } 40^\circ, 379.6$$

F : The rates of coverage of the sky by clouds during the daytime of these months are shown below.

$$F = (A_c - 0.5 R_g) / (0.8 A_c)$$

F : Average of May-September.

$$= (379.6 - 0.5 \times 398.8) / (0.8 \times 379.6) = 0.593$$

b_o : Rates of gross dry matter production of a crop on a completely overcast day (kg ha⁻¹ day⁻¹)

$$b_o: \text{Average of May-September, } 40^\circ, 244.6$$

b_c : the rates of gross dry matter production of a crop on a perfectly clear day (kg ha⁻¹ day⁻¹)

$$b_c: \text{Average of May-September, } 40^\circ, 465.6$$

In this case, the potential yield is the following.

$$Y_p = HI B_n \\ = 0.35 B_n \\ = 0.35 [0.36 b_{gm} L / (1/N + 0.25 c_t)] \\ = 0.35 [0.36 b_{gm} 0.86 / (1/135 + 0.25 c_t)] \\ = 0.11 b_{gm} / (0.0074 + 0.25 c_t) \quad (13-26)$$

One can derive the potential yield for temperature t of 20–25°C. In this case, the maximum net rate of CO₂ exchange of leaves is

$$P_m = 10 + t.$$

The maximum rate of gross production is calculated using equation (13-11) because P_m exceeds 20. If $P_m = 10+t$, $F = 0.593$, $b_o = 244.6$, $b_c = 465.6$ are substituted in equation (13-11), then the following function is obtained.

$$b_{gm} = F (0.8 + 0.01 P_m) b_o \\ + (1 - F) (0.5 + 0.025 P_m) b_c \\ = 0.593 [0.8 + 0.01 (10 + t)] \times 244.6 \\ + (1 - 0.593) [0.5 + 0.025 (10 + t)] \times 465.6 \\ = 272.667 + 6.188t \quad (13-27)$$

By substituting equation (13-27) into (13-26), the following function of the potential yield is obtained.

$$Y_p = \frac{29.546 + 0.671t}{0.0074 + 0.25c_t} \quad (13-28)$$

$$c_t = 0.00004752 + 0.00002052t + 0.00001080t^2 \quad (13-29)$$

The potential yield will be the following if the temperature is 22°C.

$$c_t = 0.009789$$

$$Y_p = \frac{29.546 + 14.762}{0.0074 + 0.00245} = 4,498 \text{ (kg ha}^{-1}\text{)}$$

5. Yield function with variable climate parameters using the crop model

(1) Smoothing functions of the crop model

Some functions of the model indicate dramatic changes in section 3 at some points. In these cases, the estimated yield will bend around the points of the climate variable. To prevent dramatic changes in the estimated yield, the two functions are smoothed using the logistic curve and spline interpolation.

1) Maximum rate of biomass production

In the original model, if the maximum net rate of CO₂ exchange of leaves (P_m) is less than 20 kg ha⁻¹ hr⁻¹, then the function of the maximum rate of gross production (b_{gm}) is (13-12). If P_m exceeds 20 kg ha⁻¹ hr⁻¹, then the function of b_{gm} is (13-11).

The system of these functions is changed as follows:

The function of b_{gm} will be (13-12) if $P_m < 15$.

The function of b_{gm} will be (13-11) if $P_m \geq 25$.

The function of b_{gm} will be the following function if $15 \leq P_m < 25$.

$$b_{gm} = F \left[\left(0.5 + \frac{0.3}{1 + e^{20 - pm}} \right) \right. \\ \left. + \left(0.01 + \frac{0.015}{1 + e^{pm - 20}} \right) P_m \right] b_o \\ + (1 - F) \left[\left(\frac{0.5}{1 + e^{20 - pm}} \right) \right. \\ \left. + \left(0.025 + \frac{0.025}{1 + e^{pm - 20}} \right) P_m \right] b_c \quad (13-30)$$

Figure 4-1 shows the relation between P_m and b_{gm} for $F=0.6$, $b_o=250$, and $b_c=450$.

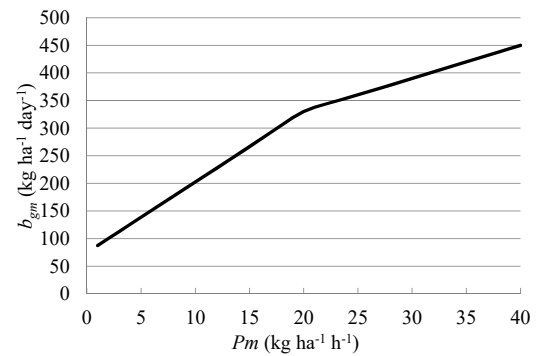


Figure 4-1. Relation between the maximum net CO₂ exchange rate (P_m) and maximum gross biomass production rate (b_{gm}).

2) Maximum net CO₂ exchange rate of leaves

The maximum net rates of CO₂ exchange of leaves (P_m) are provided in a report of Fischer et al. (2002). However, these numbers are point data presented for 5°C increments. Therefore, P_m will change dramatically around temperatures given in multiples of five.

Alleviating the dramatic changes in thresholds, the cubic-spline (CS) interpolations are applied to the P_m data. If the points of the data are $(x_1, y_1), (x_2, y_2), \dots, (x_n, y_n)$ for $(a \leq x_1 \leq x_2 \leq \dots \leq x_n \leq b)$ and if the function $f(x_i) = y_i$, for $i = 1, 2, \dots, n$ is continuous and differentiable, then the CS function of $[x_i, x_{i+1}]$ is defined as shown below.

$$S_i(x) = a_i + b_i(x - x_i) + c_i(x - x_i)^2 + d_i(x - x_i)^3$$

$$(i = 1, 2, \dots, n-1) \quad (13-31)$$

Using conditions of interpolation and continuity of the first and second derivatives on the tangent points, parameters c_i are obtained by solving the tri-diagonal matrix function; other parameters are obtained from the conditions of continuities (Shimoda and Tabe, 1990).

Figure 4-2 presents the relation between temperature and P_m of Japonica rice in a wetland area.

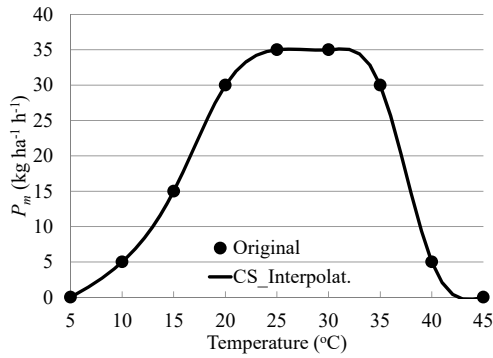


Figure 4-2. Relation between temperature and maximum net CO₂ exchange rate (P_m) of rice, Japonica, wetland.

(2) Derivation of temperature elasticities of the potential yield

The temperature elasticity of the potential yield is calculated as

$$\frac{\partial \ln Y_p}{\partial \ln TP} = \frac{\partial Y_p}{\partial TP} \frac{TP}{Y_p} = \frac{\partial B_n}{\partial TP} \frac{TP}{B_n}$$

$$= \frac{\partial b_{gm}}{\partial TP} \frac{TP}{b_{gm}}$$

$$+ \frac{\partial(1/N + 0.25c_t)^{-1}}{\partial TP} TP(1/N + 0.25c_t) \quad (13-32)$$

where Y_p stands for the potential yield (kg ha⁻¹), TP denotes the temperature (°C), B_n expresses the rate of net biomass production (kg ha⁻¹), b_{gm} signifies the maximum rate of gross biomass production (kg ha⁻¹ day⁻¹), N

represents the total growing days (day), and c_t is a constant proportion of maintenance respiration (g g⁻¹ day⁻¹).

The potential yield is calculated using equation (13-25). The gap separating the potential and actual yields is explained by evapotranspiration in the model of Doorenbos and Kassam (1979). The total growing days (N) are estimated from the cropping calendar of the USDA (1994).

Substituting $\partial b_{gm} / \partial TP$, i.e., the marginal propensity of the maximum rate of gross biomass production to temperature, and c_t , i.e., a constant proportion of maintenance respiration (13-17), into equation (13-32), the temperature elasticities of potential yield are obtained as expressed below.

If $P_m < 15$, then

$$\frac{\partial \ln Y_p}{\partial \ln TP} = \frac{[0.025Fb_o + 0.05(1-F)b_c]TP}{b_{gm}} \frac{\partial P_m}{\partial TP}$$

$$- \frac{0.25(0.0019 + 0.0020TP)c_{30}TP}{1/N + 0.25c_t} \quad (13-33)$$

If $15 \leq P_m < 25$, then

$$\frac{\partial \ln Y_p}{\partial \ln TP} = \left[\frac{0.3Fb_o + 0.5(1-F)b_c}{(1 + e^{20-P_m})^2} e^{20-P_m} \right.$$

$$+ (0.01Fb_o + 0.025(1-F)b_c$$

$$+ \left. \frac{0.015Fb_o + 0.025(1-F)b_c}{1 + e^{P_m-20}} \right)$$

$$- \frac{0.015Fb_o + 0.025(1-F)b_c}{(1 + e^{P_m-20})^2} e^{P_m-20} P_m \left. \right]$$

$$\times \frac{\partial P_m}{\partial t} \frac{TP}{b_{gm}}$$

$$- \frac{0.25(0.0019 + 0.0020TP)c_{30}TP}{1/N + 0.25c_t} \quad (13-34)$$

If $P_m \geq 25$, then

$$\frac{\partial \ln Y_p}{\partial \ln TP} = \frac{[0.01Fb_o + 0.025(1-F)b_c]TP}{b_{gm}} \frac{\partial P_m}{\partial TP}$$

$$- \frac{0.25(0.0019 + 0.0020TP)c_{30}TP}{1/N + 0.25c_t} \quad (13-35)$$

However, the potential yield is obtained from equations (13-24) and (13-25). Substituting equation (13-24) into equation (13-25) gives the equation presented below.

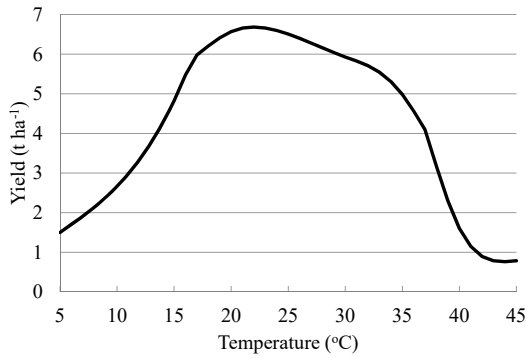
$$Y_p = \frac{0.36HI \cdot b_{gm} \cdot LAI / 5}{1 / N + 0.25c_t} \quad (13-36)$$

Figure 4-3 presents relations between the temperature and potential yield of Japonica rice in wetland, winter wheat, maize in sub-tropics, and soybeans in the tropics of the crop model of Doorenbos and Kassam (1979).

These graphs show smoothing loci based on the modified functions of the maximum rate of gross biomass production and the maximum net rates of CO₂ exchange

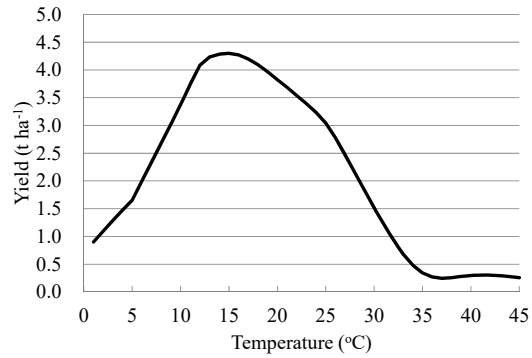
of leaves, as shown in Figures 4-1 and 4-2.

Total growing days (N) (day), harvest index (HI) (dimensionless number), leaf area index (LAI) (dimensionless number), the gross dry matter production rate on a completely overcast day and on a perfectly clear day (b_o, b_c) ($\text{kg ha}^{-1} \text{ da}^{-1}$), and solar radiation (RG) ($\text{MJ m}^{-2} \text{ day}^{-1}$) are shown in the graph notation. The unit of solar radiation is changed from $\text{cal cm}^{-2} \text{ day}^{-1}$ to $\text{MJ m}^{-2} \text{ day}^{-1}$ in these graphs of Figure 4-3 ($1 \text{ MJ m}^{-2} \text{ day}^{-1} = 23.89 \text{ cal cm}^{-2} \text{ day}^{-1}$).



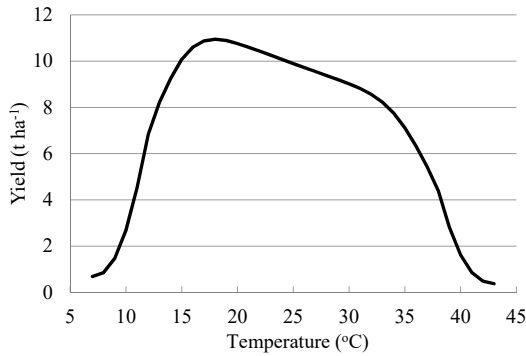
(i) Japonica rice in wetland

$N=165, HI=0.3, LAI=6.0, b_o=231, b_c=442, RG=15$ ($\text{MJ m}^{-2} \text{ day}^{-1}$)



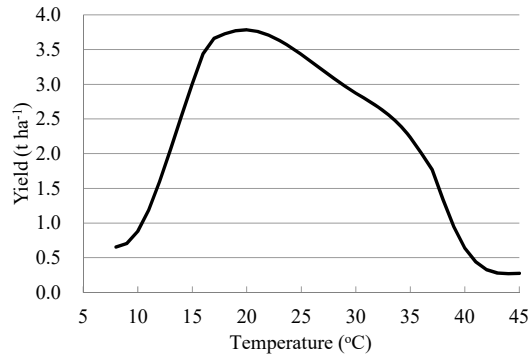
(ii) Winter wheat

$N=300, HI=0.2, LAI=4.0, b_o=178, b_c=353, RG=14$ ($\text{MJ m}^{-2} \text{ day}^{-1}$)



(iii) Maize in sub-tropics

$N=165, HI=0.45, LAI=4.5, b_o=216, b_c=417, RG=18$ ($\text{MJ m}^{-2} \text{ day}^{-1}$)



(iv) Soybeans in tropics

$N=185, HI=0.3, LAI=4.0, b_o=232, b_c=434, RG=17$ ($\text{MJ m}^{-2} \text{ day}^{-1}$)

Figure 4-3. Relation between temperature and potential yield.

(3) Derivation of solar-radiation elasticities of the potential yield

The solar-radiation elasticity of potential yield is calculated using the following equation.

$$\begin{aligned} \frac{\partial \ln Y_p}{\partial \ln RG} &= \frac{\partial Y_p}{\partial RG} \frac{RG}{Y_p} \\ &= \frac{\partial B_n}{\partial RG} \frac{RG}{B_n} = \frac{\partial b_{gm}}{\partial RG} \frac{RG}{b_{gm}} \end{aligned}$$

$$= \frac{\partial b_{gm}}{\partial F} \frac{\partial F}{\partial RG} \frac{RG}{b_{gm}} \quad (13-37)$$

The marginal propensity of F to RG is shown below.

$$\frac{\partial F}{\partial RG} = -\frac{0.625}{A_c} \quad (13-38)$$

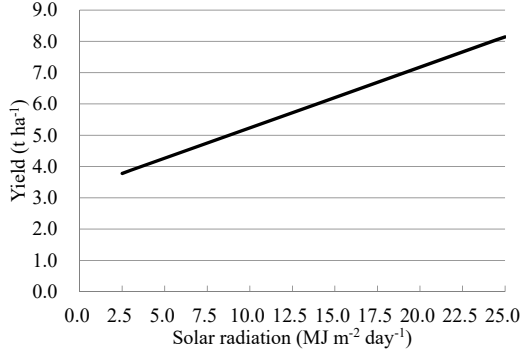
By substituting the marginal propensity of b_{gm} to F and that of F to RG (13-38) into equation (13-37), the solar radiation elasticities of the potential yield are obtained as presented below.

If $P_m < 15$, then

$$\frac{\partial \ln Y_p}{\partial \ln RG} = -\frac{0.625}{A_c} [(0.5 + 0.025 P_m) b_o - 0.05 P_m b_c] (RG/b_{gm}) \quad (13-39)$$

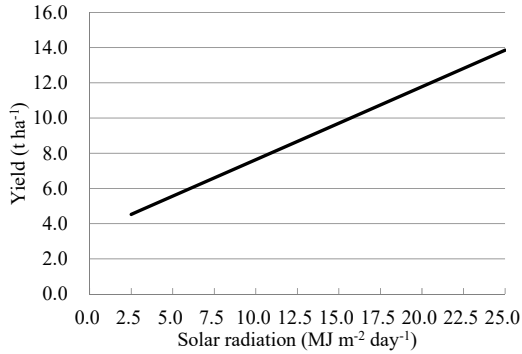
If $15 \leq P_m < 25$, then

$$\frac{\partial \ln Y_p}{\partial \ln RG} = -\frac{0.625}{A_c} [0.05 b_o + 0.75 b_c + (0.0775 b_o - 0.1375 b_c) P_m]$$



(i) Japonica rice in wetland

$N=165, HI=0.3, LAI=6.0, b_o=231, b_c=442, TP=18$



(iii) Maize in sub-tropics

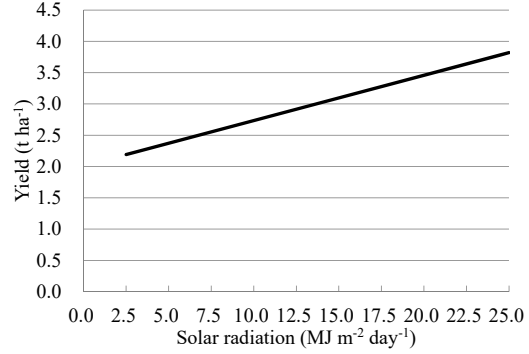
$N=165, HI=0.45, LAI=4.5, b_o=216, b_c=417, TP=18$

$$-(0.0015 b_o - 0.0025 b_c) P_m^2] (RG/b_{gm}). \quad (13-40)$$

If $P_m \geq 25$, then

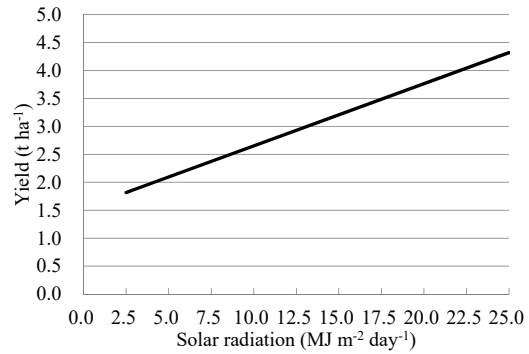
$$\frac{\partial \ln Y_p}{\partial \ln RG} = -\frac{0.625}{A_c} [(0.8 + 0.01 P_m) b_o - (0.5 + 0.025 P_m) b_c] (RG/b_{gm}). \quad (13-41)$$

Figure 4-4 presents the relations between solar radiation and the potential yield of the crop model of Doorenbos and Kassam (1979) for given conditions. N , HI , LAI , b_o , b_c , and TP are shown in the graph notation.



(ii) Winter wheat

$N=300, HI=0.2, LAI=4.0, b_o=178, b_c=353, TP=9$



(iv) Soybeans in tropics

$N=185, HI=0.3, LAI=4.0, b_o=232, b_c=434, TP=25$

Figure 4-4. Relation between solar radiation and potential yield.

(4) Incorporating temperature and solar-radiation elasticities into the yield functions

Yield functions specified as logistic functions with marginal propensity to temperature, solar radiation, and rainfall in the base year tB and the next year $tB+1$ are shown below.

$$Y_{iktB} = a_{ik} + \frac{b_{ik} - a_{ik}}{1 + \exp[-c_{ik} (T_{tB} - d_{ik})]} + \frac{\partial Y_{piktB}}{\partial TP_{iktB}} TP_{iktB} + \frac{\partial Y_{piktB}}{\partial RG_{iktB}} RG_{iktB} + \frac{\partial Y_{pik}}{\partial PT_{ik}} PT_{iktB} + \frac{\partial Y_{pik}}{\partial GDPPC_k} GDPPC_{ktB} \quad (13-42)$$

$$Y_{iktB+1} = a_{ik} + \frac{b_{ik} - a_{ik}}{1 + \exp[-c_{ik} (T_{tB+1} - d_{ik})]} + \frac{\partial Y_{piktB}}{\partial TP_{iktB}} TP_{iktB} + \frac{\partial Y_{piktB}}{\partial RG_{iktB}} RG_{iktB} + \frac{\partial Y_{pik}}{\partial PT_{ik}} PT_{iktB} + \frac{\partial Y_{pik}}{\partial GDPPC_k} GDPPC_{ktB} + \frac{1}{2} \left(\frac{\partial Y_{piktB+1}}{\partial TP_{iktB+1}} + \frac{\partial Y_{piktB}}{\partial TP_{iktB}} \right) (TP_{iktB+1} - TP_{iktB}) + \frac{1}{2} \left(\frac{\partial Y_{piktB+1}}{\partial RG_{iktB+1}} + \frac{\partial Y_{piktB}}{\partial RG_{iktB}} \right) (RG_{iktB+1} - RG_{iktB})$$

$$\begin{aligned}
& + \frac{\partial Y_{pik}}{\partial PT_{ik}} (PT_{iktB+1} - PT_{iktB}) \\
& + \frac{\partial Y_{pik}}{\partial GDPPC_k} (GDPPC_{ktB+1} - GDPPC_{ktB}) \quad (13-43)
\end{aligned}$$

In those equations, T stands for the time trend where 1961=1, Y_{pik} denotes the potential yield, i is the index of a crop, and k is the country index. Parameters a_{ik} , b_{ik} , c_{ik} , and d_{ik} of functions (13-42) and (13-43) are the same as those in function (13-1). The marginal propensity of potential yield to rainfall is fixed. It is the same as that of function (13-1).

By subtracting function (13-42) from function (13-43), a difference type yield function is derived. The yield function in year t can be written as shown below.

$$\begin{aligned}
Y_{ikt} &= Y_{ikt-1} + \frac{b_{ik} - a_{ik}}{1 + \exp[-c_{ik}(T_t - d_{ik})]} \\
& - \frac{b_{ik} - a_{ik}}{1 + \exp[-c_{ik}(T_{t-1} - d_{ik})]} \\
& + \frac{1}{2} \left(\frac{\partial Y_{pikt}}{\partial TP_{ikt}} + \frac{\partial Y_{pikt-1}}{\partial TP_{ikt-1}} \right) (TP_{ikt} - TP_{ikt-1}) \\
& + \frac{1}{2} \left(\frac{\partial Y_{pikt}}{\partial RG_{ikt}} + \frac{\partial Y_{pikt-1}}{\partial RG_{ikt-1}} \right) (RG_{ikt} - RG_{ikt-1}) \\
& + \frac{\partial Y_{pik}}{\partial PT_{ik}} (PT_{ikt} - PT_{ikt-1}) \\
& + \frac{\partial Y_{pik}}{\partial GDPPC_k} (GDPPC_{kt} - GDPPC_{kt-1}) \quad (13-44)
\end{aligned}$$

In a similar fashion, the yield function that is specified as the linear function with the logarithmic time trend is

$$\begin{aligned}
Y_{ikt} &= Y_{ikt-1} + b_{Lik} (\ln T_L - \ln T_{L-1}) \\
& + \frac{1}{2} \left(\frac{\partial Y_{pikt}}{\partial TP_{ikt}} + \frac{\partial Y_{pikt-1}}{\partial TP_{ikt-1}} \right) (TP_{ikt} - TP_{ikt-1}) \\
& + \frac{1}{2} \left(\frac{\partial Y_{pikt}}{\partial RG_{ikt}} + \frac{\partial Y_{pikt-1}}{\partial RG_{ikt-1}} \right) (RG_{ikt} - RG_{ikt-1}) \\
& + \frac{\partial Y_{pik}}{\partial PT_{ik}} (PT_{ikt} - PT_{ikt-1}) \\
& + \frac{\partial Y_{pik}}{\partial GDPPC_k} (GDPPC_{kt} - GDPPC_{kt-1}), \quad (13-45)
\end{aligned}$$

where T_L represents the time trend where 1951=1. Parameter b_{Lik} of function (13-45) is the same as that in function (13-2).

The marginal propensities are replaced by elasticities multiplied by the yield by temperature and solar-radiation in the base year tB for estimation in this model as shown below.

$$\begin{aligned}
Y_{ikt} &= Y_{ikt-1} + \frac{b_{ik} - a_{ik}}{1 + \exp[-c_{ik}(T_t - d_{ik})]} \\
& - \frac{b_{ik} - a_{ik}}{1 + \exp[-c_{ik}(T_{t-1} - d_{ik})]} \\
& + \frac{1}{2} \left(\frac{\partial \ln Y_{pikt}}{\partial \ln TP_{ikt}} + \frac{\partial \ln Y_{pikt-1}}{\partial \ln TP_{ikt-1}} \right) \frac{Y_{iktB}}{TP_{iktB}} \\
& \times (TP_{ikt} - TP_{ikt-1}) \\
& + \frac{1}{2} \left(\frac{\partial \ln Y_{pikt}}{\partial \ln RG_{ikt}} + \frac{\partial \ln Y_{pikt-1}}{\partial \ln RG_{ikt-1}} \right) \frac{Y_{iktB}}{RG_{iktB}} \\
& \times (RG_{ikt} - RG_{ikt-1}) + \beta_{PTik} (PT_{ikt} - PT_{ikt-1}) \\
& + \beta_{GDPIk} (GDPPC_{kt} - GDPPC_{kt-1}) \quad (13-46)
\end{aligned}$$

$$\begin{aligned}
Y_{ikt} &= Y_{ikt-1} + b_{Lik} (\ln T_L - \ln T_{L-1}) \\
& + \frac{1}{2} \left(\frac{\partial \ln Y_{pikt}}{\partial \ln TP_{ikt}} + \frac{\partial \ln Y_{pikt-1}}{\partial \ln TP_{ikt-1}} \right) \frac{Y_{iktB}}{TP_{iktB}} \\
& \times (TP_{ikt} - TP_{ikt-1}) \\
& + \frac{1}{2} \left(\frac{\partial \ln Y_{pikt}}{\partial \ln RG_{ikt}} + \frac{\partial \ln Y_{pikt-1}}{\partial \ln RG_{ikt-1}} \right) \frac{Y_{iktB}}{RG_{iktB}} \\
& \times (RG_{ikt} - RG_{ikt-1}) + \beta_{PTik} (PT_{ikt} - PT_{ikt-1}) \\
& + \beta_{GDPIk} (GDPPC_{kt} - GDPPC_{kt-1}) \quad (13-47)
\end{aligned}$$

In those equations, the β_{PTik} and β_{GDPIk} values of functions (13-46) and (13-47) are respectively equivalent to those in functions (13-1) and (13-2).

It is estimated using ordinary least squares (OLS) method or auto regressive (AR) method if the yield function is specified as a linear function. It is estimated using nonlinear least square (NL) method if the yield function is specified as a logistic function.

The temperature and solar-radiation elasticities of yields of the four crops, i.e., *RI*, *WH*, *MZ*, and *SB*, in each country are comparable among different years and countries. Temporary for this model, it is assumed that the temperature and solar-radiation elasticities of yield of other grains, *XG*, and other oil crops, *XS*, are assumed respectively to be equal to those of maize, *MZ* and soybeans, *SB*.

The temperature and solar-radiation elasticities vary according to changes in the climate variables in these yield functions. Therefore, this model is useful for compiling long-run outlooks.

Necessary data for calculation of the potential yields are shown in Tables A-1-1 – A-1-5 in Appendix 1.

Chapter 5. Calculation of elasticities of supply and demand and data of launching pad and climate

1. Elasticities of supply and demand

The commodities included in this model are shown in Table 5-1. The production and the quantities of other grains, other oil crops, other oils, and other oil cakes are summations of the commodities indicated in the table footnote.

The covered countries or regions in this model are shown in Table 5-2. This is equivalent to those of the GTAP9, which is shown in Narayanan and McDougall (2015), because the production cost and output data of the GTAP9 are used for calculation of the elasticities of supply and demand. The quantities and prices of supply and demand of the FAOSTAT are aggregated or averaged to the 140 countries and regions.

To calculate the elasticities of supply, cost shares to production values such as those shown in equation (1-24) are required. In this model, cost data are obtained from the NVFA file. The output value data are obtained from the VALUEOUTPUT file of GTAP9 in 2011. It will be divided into value of each commodity using production values calculated from data of FAOSTAT if the GTAP9 does not cover the commodity. The commodities covered by the GTAP9 are shown in Narayanan and McDougall (2015).

The cost and output values of grains and oil crops are the quantities of “pdr” for *RI*, “wht” for *WH*, “gro” for *MZ* and *XG*, and “osd” for *SB* and *XS* in the GTAP9. There are four inputs for grain and oil crop production and land is the number of “Land”, fertilizer and agrochemicals is the number of “crp”, labor is the number of “ag othlowsk”, and capital is the number of “capital.”

The cost and output values of meats, eggs, and raw milk are the number of “ctl” for *BF* and *SH*, “oap” for *PK*, *PM*, *XM*, and *EG*, and “rmk” for *MK* in the GTAP9. As inputs, this model has many feed items: “pdr” as *RI*, “wht” as *WH*, “gro” as *MZ* and *XG*, “osd” as *SB* and *XS*, “vol” as *CS* and *CX*, and “mil” as *SK*. The feed cost shares of *MZ* and *XG*, *SB* and *XS*, and *CS* and *CX* are divided by the production rates. The other inputs of meats, eggs, and milk production are land, labor, and capital, where land is the number of “Land”, labor is the summation of “off mgr pros” and “ag othlowsk”, and capital is the number of “capital.”

The costs of vegetable oils and oil cakes are the number of “osd” as crop input, the summation of “off mgr pros” and “ag othlowsk” as labor input, and the number of “capital” as capital input. The output value is the number of “vol”.

Similarly, the costs of dairy products are the number of “rmk” as milk input, the summation of “off mgr pros” and “ag othlowsk” as labor input, and the number of “capital”

as capital input. The output value is the number of “mil”.

To calculate the production value share for obtaining the food demand shown in equation (5-10), the number of the FAOSTAT, the average between 2010 and 2012 are used.

Calculated cost shares to the output values are shown from Table A-2-1 through A-2-7 in the Appendix 2. The supply and the input demand elasticities will be obtained if these cost shares are substituted into the equations in the tables in chapter 2. The calculated supply, input demand, and food demand elasticities are presented in Table A-3-1 through Table A-3-16 in Appendix 3. In the table of elasticities of input demand of livestock production, only rice (*RI*) input for beef (*BF*) production is shown in Table A-3-13 because the elasticities of input demand for output price and land, labor, and capital inputs take the same numbers. Similarly, only the food demand elasticities of rice are shown in Table A-3-16 because the cross-price elasticities take the same numbers in a country.

Tables 5-3–5-9 present elasticities of supply, input demand, and food demand of grains, oil crops, vegetable oil, oilcake, and livestock products. Dairy products in the U.S. are given as an example.

2. Changes in income elasticities of demand

In long run, the income elasticities of foods are expected to change according to the economic growth. Considering changes in food habits, the functions for which the dependent variable is the income elasticity and the explanatory variable is logarithmic per-capita income are estimated.

Table 5-10 presents results of estimation of the following equation:

$$IED_{ij} = \alpha_j + \beta_j \ln(GDP_i / POP_i) \quad (14-1)$$

where IED_{ij} is the income elasticity of demand of commodity j in country i , GDP_i and POP_i respectively represent the gross domestic product and population in country i . Data of IED_{ij} are income elasticities of the IFPSIM (Oga and Yanagishima, 1996). In addition, GDP_i and POP_i are the average quantities of the 1990s World Bank data.

Equation (14-1) is estimated using OLS with cross sectional data and regional dummies.

The estimated income elasticities of demand, i.e., IED_{ij} , are changed to slopes using the following equation. These elasticities are substituted into parameters of demand functions such as γ_{Mi} of equation (6-7) as

$$\frac{\partial QDF}{\partial GDPPC} = \frac{\partial \ln QDF}{\partial \ln GDPPC} \frac{QDF}{GDPPC}, \quad (14-2)$$

where QDF stands for food demand and $GDPPC$ represents per-capita income. The left-hand side of the

equation is the slope. The first term of the right-hand side of the equation is the income elasticity.

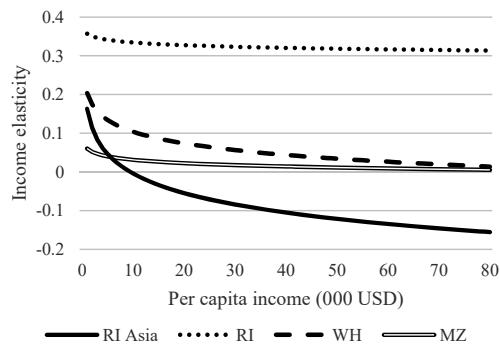


Figure 5-1. Changes in income elasticity of crops.

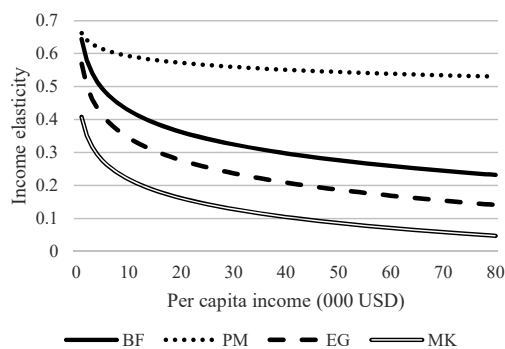


Figure 5-2. Changes in income elasticity of livestock products.

Figures 5-1 and 5-2 show changes in income elasticities according to increases in per-capita income.

3. Quantities of supply and demand and prices

The quantities related to production, i.e., yield, planted area, and production of crops are the quantities of the production section of the FAOSTAT. Furthermore, production per head, number of producing animals, and production of livestock animals are quantities of the same database.

Quantities related to supply and demand, i.e., imports, exports, stock change, feed demand, seed demand, process demand, food demand, losses, and other uses are quantities referred from the commodity balance section of the FAOSTAT.

Farm prices of cereals, oil crops, meats, eggs, and raw milk are data of annual producer prices referred from the FAOSTAT. The producer prices of vegetable oils and oil cakes are the same as those of oil crops as proxies. The producer prices of dairy products, i.e., skimmed milk, butter, and cheese, are the quantities referred from OECD-FAO Agricultural Outlook 2017-2026. Missing prices for some countries are replaced by prices from neighboring countries.

Launching pad data of the quantities and prices in the 140 countries and regions of the 20 commodities in 2010 are shown in Tables A-4-1–A-4-20 in the Appendix. These data are averaged for the three years around the year, i.e., data of year 2010 are the average of data of 2009–2011.

To make launching pad data, bulk data of the FAOSTAT are aggregated or averaged in the countries and regions for the commodities from years 1993–2013 using FORTRAN programs developed by the author. However, only launching pad data from 2006–2010 and 1999 are obtained as solutions of convergence in this model. This data matching problem is being investigated.

4. Climate and macro-economic data

Actual climate data are numbers from CRU-TS31 of the University of East Anglia during 1961–2009. The forecast climate data are numbers from the Representative Concentration Pathways (RCP) scenarios of the Model for Interdisciplinary Research on Climate 5 (MIROC5). Four RCPs exist: RCP2.6, RCP4.5, RCP6.0, and RCP8.5. Radiative forcing of RCP8.5 is highest in these scenarios. The original data are 0.5 degree gridded data. These data are nationally or regionally averaged (Yokozawa et al., 2003). The planting regions in a large country such as the U.S. are selected based on the table presented by Furuya and Koyama (2005).

The forecast data of GDP and population are referred from the Shared Socioeconomic Pathways (SSP) of the OECD. Five SSPs exist: SSP1–SSP5. Potential damage is greatest, and the cost of mitigation is highest in SSP3. Therefore, SSP3 is the worst scenario. SSP1 is the best scenario; SSP2 is the intermediate scenario. These five-year step data were converted using linear approximation.

Table 5-1. Goods in the model

Group of goods	Abbreviation	No.	Goods	Abbreviation	Use
Cereal	G	1	Rice	RI	Food, Feed
		2	Wheat	WH	Food, Feed
		3	Maize	MZ	Food, Feed
		4	Other grains	XG	Food, Feed
Oil crop	S	5	Soybeans	SB	Food, Feed
		6	Other oil crops	XS	Food, Feed
Vegetable oil	O	7	Soybean oil	OS	Food
		8	Other vegetable oils	OX	Food
Oil cake	C	9	Soybean cake	CS	Feed
		10	Other oil cakes	CX	Feed
Meat	M	11	Beef	BF	Food
		12	Mutton	SH	Food
		13	Pork	PK	Food
		14	Poultry meat	PM	Food
		15	Other meat	XM	Food
Egg	EG	16	Poultry egg	EG	Food
Milk	MK	17	Raw milk	MK	Food
Dairy products	D	18	Skim milk	SK	Food
		19	Butter	BT	Food
		20	Cheese	CH	Food

Note: *XG* comprises Barley, Millet, Oats, Rye, Sorghum, and Cereals other

XS comprises Castor oil seed, Coconut, Ground nuts, Hempseed, Jojoba seed, Kapok fruit, Karite nuts, Linseed, Melon seed, Mustard seed, Oil palm fruit, Olive, Poppy seed, Rape seed, Safflower seed, Seed cotton, Sesame seed, Sunflower seed, Tallow tree seed, Tung nuts, and Oil seeds nes.

OX comprises Coconut, Cotton seed, Ground nut, Maize germ, Olive, Palm, Palm kernel, Rape & Mustard, Rice bran, Sesame seed, Sunflower seed, and Oil crop other.

CX comprises Copra, Cotton seed, Ground nut, Perm kernel, Rape & Mustard, Sesame seed, Sunflower seed, and Oilseed other.

PM comprises Chicken, Duck, Goose & Guinea Fowl, Turkey, and Bird nes.

XM comprises Ass, Camel, Game, Horse, Mule, Other Camelids, Other Rodents, Rabbit, and Meat nes.

Table 5-2. Countries in the model and abbreviations.

No.	Code	Country and region	Member countries
1	AUS	Australia	Australia, Cocos (Keeling) Islands, Christmas Island, Heard Island and McDonald Islands, Norfolk Island
2	NZL	New Zealand	New Zealand
3	XOC	Rest of Oceania	American Samoa, Cook Islands, Fiji, Micronesia Federated States of Guam, Kiribati, Marshall Islands, Northern Mariana Islands, New Caledonia, Niue, Nauru, Palau, Papua New Guinea, French Polynesia, Solomon Islands, Tokelau, Tonga, Tuvalu, Vanuatu, Wallis and Futuna, Samoa, Pitcairn, United States Minor Outlying Islands
4	CHN	China	China
5	HKG	Hong Kong	Hong Kong
6	JPN	Japan	Japan
7	KOR	Korea Republic of	Korea, Republic of
8	MNG	Mongolia	Mongolia
9	TWN	Taiwan	Taiwan
10	XEA	Rest of East Asia	Macao, Korea, Democratic Peoples Republic of
11	BRN	Brunei Darussalam	Brunei Darussalam
12	KHM	Cambodia	Cambodia
13	IDN	Indonesia	Indonesia
14	LAO	Lao People's Democratic Republic	Lao People's Democratic Republic
15	MYS	Malaysia	Malaysia
16	PHL	Philippines	Philippines
17	SGP	Singapore	Singapore
18	THA	Thailand	Thailand
19	VNM	Viet Nam	Viet Nam
20	XSE	Rest of Southeast Asia	Brunei Darussalam, Myanmar, Timor Leste
21	BGD	Bangladesh	Bangladesh
22	IND	India	India
23	NPL	Nepal	Nepal
24	PAK	Pakistan	Pakistan
25	LKA	Sri Lanka	Sri Lanka
26	XSA	Rest of South Asia	Afghanistan, Bhutan, Maldives
27	CAN	Canada	Canada
28	USA	United States of America	United States of America
29	MEX	Mexico	Mexico
30	XNA	Rest of North America	Bermuda, Greenland, Saint Pierre and Miquelon
31	ARG	Argentina	Argentina
32	BOL	Bolivia, Plurinational Republic of	Bolivia, Plurinational Republic of
33	BRA	Brazil	Brazil
34	CHL	Chile	Chile
35	COL	Colombia	Colombia
36	ECU	Ecuador	Ecuador
37	PRY	Paraguay	Paraguay
38	PER	Peru	Peru
39	URY	Uruguay	Uruguay
40	VEN	Venezuela	Venezuela
41	XSM	Rest of South America	Falkland Islands (Malvinas), French Guiana, Guyana, Suriname, South Georgia and the South Sandwich Islands
42	CRI	Costa Rica	Costa Rica
43	GTM	Guatemala	Guatemala
44	HND	Honduras	Honduras
45	NIC	Nicaragua	Nicaragua
46	PAN	Panama	Panama
47	SLV	El Salvador	El Salvador
48	XCA	Rest of Central America	Belize
49	DOM	Dominican Republic	Dominican Republic
50	JAM	Jamaica	Jamaica
51	PRI	Puerto Rico	Puerto Rico
52	TTO	Trinidad and Tobago	Trinidad and Tobago
53	XCB	Caribbean	Aruba, Anguilla, Netherlands Antilles, Antigua and Barbuda, Bahamas, Barbados, Cuba, Cayman Islands, Dominica, Grenada, Haiti, Saint Kitts and Nevis, Saint Lucia, Montserrat, Turks and Caicos Islands, Saint Vincent and the Grenadines, Virgin Islands British, Virgin Islands U.S.
54	AUT	Austria	Austria
55	BEL	Belgium	Belgium
56	CYP	Cyprus	Cyprus
57	CZE	Czech Republic	Czech Republic
58	DNK	Denmark	Denmark
59	EST	Estonia	Estonia
60	FIN	Finland	Finland, Aland Islands
61	FRA	France	France, Guadeloupe, Martinique, Reunion
62	DEU	Germany	Germany
63	GRC	Greece	Greece
64	HUN	Hungary	Hungary
65	IRL	Ireland	Ireland
66	ITA	Italy	Italy
67	LVA	Latvia	Latvia
68	LTU	Lithuania	Lithuania
69	LUX	Luxembourg	Luxembourg
70	MLT	Malta	Malta
71	NLD	Netherlands	Netherlands
72	POL	Poland	Poland
73	PRT	Portugal	Portugal
74	SVK	Slovakia	Slovakia

Table 5-2. Countries in the model and abbreviations (continued).

No.	Code	Country and region	Member countries
75	SVN	Slovenia	Slovenia
76	ESP	Spain	Spain
77	SWE	Sweden	Sweden
78	GBR	United Kingdom	United Kingdom
79	CHE	Switzerland	Switzerland
80	NOR	Norway	Norway, Svalbard and Jan Mayen
81	XEF	Rest of EFTA	Iceland, Liechtenstein
82	ALB	Albania	Albania
83	BGR	Bulgaria	Bulgaria
84	BLR	Belarus	Belarus
85	HRV	Croatia	Croatia
86	ROU	Romania	Romania
87	RUS	Russian Federation	Russian Federation
88	UKR	Ukraine	Ukraine
89	XEE	Rest of Eastern Europe	Moldova Republic of
90	XER	Rest of Europe	Andorra, Bosnia and Herzegovina, Faroe Islands, Gibraltar, Monaco, Macedonia the former Yugoslav Republic of, San Marino, Serbia, Guernsey, Isle of Man, Jersey, Montenegro, Holy See (Vatican City State)
91	KAZ	Kazakhstan	Kazakhstan
92	KGZ	Kyrgyzstan	Kyrgyzstan
93	XSU	Rest of Former Soviet Union	Tajikistan, Turkmenistan, Uzbekistan
94	ARM	Armenia	Armenia
95	AZE	Azerbaijan	Azerbaijan
96	GEO	Georgia	Georgia
97	BHR	Bahrain	Bahrain
98	IRN	Iran, Islamic Republic of	Iran, Islamic Republic of
99	ISR	Israel	Israel
100	KWT	Kuwait	Kuwait
101	JOR	Jordan	Jordan
102	OMN	Oman	Oman
103	QAT	Qatar	Qatar
104	SAU	Saudi Arabia	Saudi Arabia
105	TUR	Turkey	Turkey
106	ARE	United Arab Emirates	United Arab Emirates
107	XWS	Rest of Western Asia	Iraq, Lebanon, Palestinian Territory Occupied, Syrian Arab Republic, Yemen
108	EGY	Egypt	Egypt
109	MAR	Morocco	Morocco
110	TUN	Tunisia	Tunisia
111	XNF	Rest of North Africa	Algeria, Libyan Arab Jamahiriya, Western Sahara
112	BEN	Benin	Benin
113	BFA	Burkina Faso	Burkina Faso
114	CMR	Cameroon	Cameroon
115	CIV	Cote d'Ivoire	Cote d'Ivoire
116	GHA	Ghana	Ghana
117	GIN	Guinea	Guinea
118	NGA	Nigeria	Nigeria
119	SEN	Senegal	Senegal
120	TGO	Togo	Togo
121	XWF	Rest of Western Africa	Cape Verde, Gambia, Guinea-Bissau, Liberia, Mali, Mauritania, Niger, Saint Helena, Ascension and Tristan da Cunha, Sierra Leone
122	XCF	Central Africa	Central African Republic, Congo, Gabon, Equatorial Guinea, Sao Tome and Principe, Chad
123	XAC	South Central Africa	Angola, Congo the Democratic Republic of the
124	ETH	Ethiopia	Ethiopia
125	KEN	Kenya	Kenya
126	MDG	Madagascar	Madagascar
127	MWI	Malawi	Malawi
128	MUS	Mauritius	Mauritius
129	MOZ	Mozambique	Mozambique
130	RWA	Rwanda	Rwanda
131	TZA	Tanzania, United Republic of	Tanzania, United Republic of
132	UGA	Uganda	Uganda
133	ZMB	Zambia	Zambia
134	ZWE	Zimbabwe	Zimbabwe
135	XEC	Rest of Eastern Africa	Burundi, Comoros, Djibouti, Eritrea, Mayotte, Sudan, Somalia, Seychelles
136	BWA	Botswana	Botswana
137	NAM	Namibia	Namibia
138	ZAF	South Africa	South Africa
139	XSC	Rest of South African Customs Union	Lesotho, Swaziland
140	XTW	Rest of the World	Antarctica, French Southern Territories, Bouvet Island, British Indian Ocean Territory

Source: Narayanan and McDougall (2015)

Table 5-3. Elasticities of supply for grains and oil crops in the U.S.

Supply	Price of RI	Price of WH	Price of MZ	Price of XG	Price of SB	Price of XG	Price of XS	Price of chem.	Labor input	Capital input	Area $t-1$
RI	0.316	-0.023	-0.049	-0.004	-0.041	-0.007	-0.196	-0.120	0.027	0.238	0.320
WH	-0.001	0.295	-0.046	-0.004	-0.038	-0.006	-0.182	-0.113	0.025	0.221	0.800
MZ	-0.001	-0.020	0.392	-0.004	-0.035	-0.006	-0.178	-0.215	0.025	0.216	0.800
XG	-0.001	-0.020	-0.042	0.392	-0.035	-0.006	-0.178	-0.215	0.025	0.216	0.800
SB	-0.001	-0.023	-0.049	-0.004	0.330	-0.007	-0.200	-0.130	0.028	0.243	0.400
XS	-0.001	-0.023	-0.049	-0.004	-0.041	0.330	-0.200	-0.130	0.028	0.243	0.400

Table 5-4. Elasticities of supply for vegetable oils and oil cakes in the U.S.

Supply	Price of output	Price of SB, XS	Labor input	Capital input	Production $t-1$
OS, OX, CS, CX	0.691	-0.691	0.090	0.062	0.800

Table 5-5. Elasticities of supply for livestock products in the U.S.

Supply	Price of output	Price of RI	Price of WH	Price of MZ	Price of XG	Price of SB	Price of XS	Price of CS	Price of CX	Price of SK	Labor input	Capital input	Head $t-1, t-2$
BF, SH	0.490	-0.002	-0.004	-0.455	-0.019	-0.001	0.000	-0.009	-0.001	0.000	0.099	0.120	0.800
PK, PM, XM, EG	0.077	-0.001	-0.005	-0.047	-0.002	-0.001	0.000	-0.023	-0.002	0.000	0.064	0.078	0.700
MK	0.640	-0.002	-0.004	-0.615	-0.025	-0.001	0.000	-0.018	-0.002	0.000	0.095	0.116	0.700

Table 5-6. Elasticities of input demand for beef and mutton production in the U.S.

Input demand	Price of output	Price of RI	Price of WH	Price of MZ	Price of XG	Price of SB	Price of XS	Price of CS	Price of CX	Price of SK	Labor input	Capital input
RI	1.490	-1.002	-0.004	-0.455	-0.019	-0.001	0.000	-0.009	-0.001	0.000	0.099	0.120
WH	1.490	-0.002	-1.004	-0.455	-0.019	-0.001	0.000	-0.009	-0.001	0.000	0.099	0.120
MZ	1.490	-0.002	-0.004	-1.455	-0.019	-0.001	0.000	-0.009	-0.001	0.000	0.099	0.120
XG	1.490	-0.002	-0.004	-0.455	-1.019	-0.001	0.000	-0.009	-0.001	0.000	0.099	0.120
SB	1.490	-0.002	-0.004	-0.455	-0.019	-1.001	0.000	-0.009	-0.001	0.000	0.099	0.120
XS	1.490	-0.002	-0.004	-0.455	-0.019	-0.001	-1.000	-0.009	-0.001	0.000	0.099	0.120
CS	1.490	-0.002	-0.004	-0.455	-0.019	-0.001	0.000	-1.009	-0.001	0.000	0.099	0.120
CX	1.490	-0.002	-0.004	-0.455	-0.019	-0.001	0.000	-0.009	-1.001	0.000	0.099	0.120
SK	1.490	-0.002	-0.004	-0.455	-0.019	-0.001	0.000	-0.009	-0.001	-1.000	0.099	0.120

Table 5-7. Elasticities of supply for dairy products in the U.S.

Supply	Price of output	Price of MK	Labor input	Capital input	Production $t-1$
SK, BT, CH	0.462	-0.462	0.179	0.143	0.800

Table 5-8. Elasticities of input demand of dairy products in the U.S.

Supply	Price of output	Price of MK	Labor input	Capital input
SK, BT, CH	1.462	-1.462	0.179	0.143

Table 5-9. Price elasticities of demand in the U.S.

Food demand	P_RI Price of RI	P_WH Price of WH	P_MZ Price of MZ	P_XG Price of XG	P_SB Price of SB	P_XS Price of XS	P_OS Price of OS	P_OX Price of OX	P_BF Price of BF	P_SH Price of SH	P_PK Price of PK	P_PM Price of PM	P_XM Price of XM	P_XG Price of XG	P_MK Price of MK	P_SK Price of SK	P_BT Price of BT	P_CH Price of CH	IE Income elast.
RI	-0.994	0.053	0.177	0.011	0.087	0.009	0.009	0.015	0.128	0.000	0.047	0.071	0.001	0.023	0.100	0.118	0.009	0.054	0.200
WH	0.006	-0.947	0.177	0.011	0.087	0.009	0.009	0.015	0.128	0.000	0.047	0.071	0.001	0.023	0.100	0.118	0.009	0.054	-0.300
MZ	0.006	0.053	-0.823	0.011	0.087	0.009	0.009	0.015	0.128	0.000	0.047	0.071	0.001	0.023	0.100	0.118	0.009	0.054	-0.200
XG	0.006	0.053	0.177	-0.989	0.087	0.009	0.009	0.015	0.128	0.000	0.047	0.071	0.001	0.023	0.100	0.118	0.009	0.054	0.000
SB	0.006	0.053	0.177	0.011	-0.913	0.009	0.009	0.015	0.128	0.000	0.047	0.071	0.001	0.023	0.100	0.118	0.009	0.054	0.080
XS	0.006	0.053	0.177	0.011	0.087	-0.991	0.009	0.015	0.128	0.000	0.047	0.071	0.001	0.023	0.100	0.118	0.009	0.054	0.080
OS	0.006	0.053	0.177	0.011	0.087	0.009	-0.991	0.015	0.128	0.000	0.047	0.071	0.001	0.023	0.100	0.118	0.009	0.054	0.080
OX	0.006	0.053	0.177	0.011	0.087	0.009	0.009	-0.985	0.128	0.000	0.047	0.071	0.001	0.023	0.100	0.118	0.009	0.054	0.080
BF	0.006	0.053	0.177	0.011	0.087	0.009	0.009	0.015	-0.872	0.000	0.047	0.071	0.001	0.023	0.100	0.118	0.009	0.054	0.100
SH	0.006	0.053	0.177	0.011	0.087	0.009	0.009	0.015	0.128	-1.000	0.047	0.071	0.001	0.023	0.100	0.118	0.009	0.054	0.200
PK	0.006	0.053	0.177	0.011	0.087	0.009	0.009	0.015	0.128	0.000	-0.953	0.071	0.001	0.023	0.100	0.118	0.009	0.054	-0.200
PM	0.006	0.053	0.177	0.011	0.087	0.009	0.009	0.015	0.128	0.000	0.047	-0.929	0.001	0.023	0.100	0.118	0.009	0.054	0.100
XM	0.006	0.053	0.177	0.011	0.087	0.009	0.009	0.015	0.128	0.000	0.047	0.071	-0.999	0.023	0.100	0.118	0.009	0.054	0.200
EG	0.006	0.053	0.177	0.011	0.087	0.009	0.009	0.015	0.128	0.000	0.047	0.071	0.001	-0.977	0.100	0.118	0.009	0.054	0.100
MK	0.006	0.053	0.177	0.011	0.087	0.009	0.009	0.015	0.128	0.000	0.047	0.071	0.001	0.023	-0.900	0.100	0.009	0.054	0.100
SK	0.006	0.053	0.177	0.011	0.087	0.009	0.009	0.015	0.128	0.000	0.047	0.071	0.001	0.023	0.100	-0.882	0.009	0.054	0.100
BT	0.006	0.053	0.177	0.011	0.087	0.009	0.009	0.015	0.128	0.000	0.047	0.071	0.001	0.023	0.100	0.118	-0.991	0.054	0.100
CH	0.006	0.053	0.177	0.011	0.087	0.009	0.009	0.015	0.128	0.000	0.047	0.071	0.001	0.023	0.100	0.118	0.009	-0.946	0.100

Table 5-10. Estimation results of the function of income elasticity of demand to per-capita income.

Products	Region or country	Intercept	Parameter of ln(GDP/POP)	Adj. R ²
RI	Asia	0.1632	-0.0727	0.41
RI	XSE	-0.3172	-0.0727	0.41
RI	EU, fmrUSSR	0.2481	-0.0099	0.37
RI	SSA	0.1770	-0.0099	0.37
RI	Other	0.3570	-0.0099	0.37
WH	XSE	-0.0611	-0.0433	0.14
WH	XNA	0.5135	-0.0433	0.14
WH	Other	0.2036	-0.0433	0.14
MZ	Indochina	-0.1559	-0.0125	0.07
MZ	XSE	-0.3139	-0.0125	0.07
MZ	Other	0.0601	-0.0125	0.07
XG	E Asia	0.2445	-0.0145	0.47
XG	Indochina	-0.4278	-0.0145	0.47
XG	XSE	-0.5144	-0.0145	0.47
XG	Baltic	-0.2202	-0.0145	0.47
XG	fmrUSSR	-0.3499	-0.0145	0.47
XG	SSA	0.3219	-0.0145	0.47
XG	Other	-0.0699	-0.0145	0.47
SB, XS	XSE	0.0022	-0.1656	0.54
SB, XS	XEF	1.5941	-0.1656	0.54
SB, XS	ME	1.3227	-0.1656	0.54
SB, XS	Other	1.0035	-0.1656	0.54
OS, OX	BRN	1.6289	-0.1367	0.45
OS, OX	XSE	0.2078	-0.1367	0.45
OS, OX	XNA	1.6001	-0.1367	0.45
OS, OX	Other	1.0422	-0.1367	0.45
BF	JPN	2.0274	-0.0938	0.57
BF	XSE	0.2329	-0.0938	0.57
BF	C Asia	0.2892	-0.0938	0.57
BF	Other	0.6443	-0.0938	0.57
SH	E Asia	0.7341	-0.0382	0.28
SH	Indochina	0.1050	-0.0382	0.28
SH	XSE	-0.2605	-0.0382	0.28
SH	XSA	0.0399	-0.0382	0.28
SH	C Asia	0.2648	-0.0382	0.28
SH	ME	0.7893	-0.0382	0.28
SH	Other	0.4395	-0.0382	0.28
PK	BRN	0.4591	-0.0690	0.69
PK	EEU, fmrUSSR	0.2884	-0.0690	0.69
PK	Africa	0.8377	-0.0690	0.69
PK	Other	0.5281	-0.0690	0.69
PM, XM	XEA	0.3386	-0.0301	0.47
PM, XM	Indochina	0.1054	-0.0301	0.47
PM, XM	XSE	-0.3029	-0.0301	0.47
PM, XM	NPL	-0.4060	-0.0301	0.47
PM, XM	ME	0.8778	-0.0301	0.47
PM, XM	Other	0.6619	-0.0301	0.47
EG	BRN	1.0927	-0.0978	0.50
EG	XSE	0.2042	-0.0978	0.50
EG	XNA	1.5382	-0.0978	0.50
EG	fmrUSSR	0.3312	-0.0978	0.50
EG	Other	0.5695	-0.0978	0.50
MK, SK, BT, CH	HKG	0.9976	-0.0823	0.49
MK, SK, BT, CH	KOR	1.0022	-0.0823	0.49
MK, SK, BT, CH	TWN	0.9878	-0.0823	0.49
MK, SK, BT, CH	BRN	0.9403	-0.0823	0.49
MK, SK, BT, CH	XSE	0.0847	-0.0823	0.49
MK, SK, BT, CH	ME	0.6694	-0.0823	0.49
MK, SK, BT, CH	Other	0.4079	-0.0823	0.49

Note:

Asia: CHN, HKG, JPN, KOR, MNG, TWN, XEA, BRN, KHM, IDN, LAO, MYS, PHL, SGP, THA, VNM, XSE, BGD, IND, NPL, PAK, LKA, XSA

E Asia (East Asia): HKG, JPN, KOR, TWN

C Asia (Central Asia): KAZ, KGZ, XSU, ARM, AZE, GEO

Indochina: KHM, LAO, VNM

EU (Europe): AUT, BEL, CYP, CZE, DNK, EST, FIN, FRA, DEU, GRC, HUN, IRL, ITA, LVA, LTU, LUX, MLT, NLD, POL, PRT, SVK, SVN, ESP, SWE, GBR,

CHE, NOR, XEF, ALB, BGR, BLR, HRV, ROU

EEU (Eastern Europe): ALB, BGR, BLR, HRV, ROU, XEE, XER

fmrUSSR: RUS, UKR, KAZ, KGZ, XSU, ARM, AZE, GEO

Baltic: EST, LVA, LTU

ME (Middle East): BHR, IRN, ISR, KWT, JOR, OMN, QAT, SAU, TUR, ARE, XWS, EGY, MAR, TUN, XNF

SSA (Sub Saharan Africa): BEN, BFA, CMR, CIV, GHA, GIN, NGA, SEN, TGO, XWF, XCF, XAC, ETH, KEN, MDG, MWI, MUS, MOZ, RWA, TZA, UGA,

ZMB, ZWE, XEC, BWA, NAM

Africa: SSA, ZAF, XSC

Chapter 6. Effects of climate change on world food markets

1. Objectives

Increasing air temperatures are attributable to increased concentrations of greenhouse gases (GHGs) such as carbon dioxide (CO₂). Increased concentrations of CO₂ have some positive effects on plant growth (Poorter and Navas, 2002). Nevertheless, the higher temperatures impede seed growth of crops. Moreover, extreme temperature increases cause sterility.

Decreased crop production caused by climate change is expected to affect not only crop supply but also livestock production because of lower availability of animal feed. Analyses of climate change effects such as the analysis of Fischer et al. (2005) emphasize changes in crop production. Analyses of effects on livestock products are few (Rötter and van de Geijn, 1999).

The objectives of this chapter are to reveal climate change effects not only on crops but also on livestock products using the world food model developed in earlier chapters.

2. Simulation assumptions

Crop yields and per-head of livestock production increase depending on the trend parameter of the linearly estimated functions or the four parameters of the logistic functions. Climate variables follow four RCP scenarios. GDP and population follow five SSP scenarios.

Climate baseline numbers are presented on the assumption that these numbers are fixed in average numbers of three years from the starting year of this simulation: 2010. Furthermore, price differences between those of leader countries and other countries are fixed in the simulation start year.

3. Simulation results

First, climate change effects on crop yields are investigated by comparing results of RCP6.0 and the baseline under SSP2. Figure 6-1 portrays average changes in crop yields for the 2050s. Rice production in North and South American countries and northern African countries are expected to be adversely affected by climate change. Wheat production in low-latitude countries is expected to decrease. Maize and other cereals are used mainly as feed for livestock. Maize production in northern and southern African and South Asian countries are expected to decrease. Other cereal production in low-latitude countries is expected to decrease because of climate change. Soybeans and other oil crop production will not be affected as strongly by climate change as other crops.

Second, changes in yields in four major affected countries are investigated with comparison of the following four scenario combinations: baseline–SSP2,

RCP6.0–SSP2, RCP2.6–SSP1, and RCP8.5–SSP3. Figure 6-2 depicts the simulation results, which indicate that rice production in Viet Nam will be 0.2 t ha⁻¹ lower and that wheat production in India will be 0.13 t ha⁻¹ lower in the 2050s. Higher GDP will engender greater production in India. These results also demonstrate that maize production in Brazil and other cereal production in Nigeria will not be strongly affected by climate change, although changes in GDP are expected to engender larger maize yield differences in Brazil.

Third, changes in food and feed crop supply are investigated by comparing results of RCP6.0 and the baseline under SSP2. Figure 6-3 displays changes in the supply of crops related to climate change worldwide in the 2050s. These maps reveal that the per-capita food supply of rice and wheat, which are unaffected by climate change because production in important rice producing countries in Asia and wheat producing countries in North America and Oceania, are expected to increase because of climate change. These products will be traded to countries in which shortages occur. However, these maps indicate that feed supply in some countries, especially in South America, are expected to be decreased by climate change.

Figure 6-4 portrays changes in the overall feed supply for two crops and two cakes in South American countries. Comparing RCP6.0–SSP2 to baseline–SSP2, feed supply of maize, other cereals, soybean cake, and other seed cakes are expected to decrease respectively by 6.5 million t, 0.5 million t, 3.5 million t, and 0.5 million t in the 2050s.

Finally, climate change effects on livestock product food supply are investigated. Figure 6-5 portrays changes in supply of meats, eggs, and raw milk worldwide. These are results of comparing RCP6.0 and the baseline under the same socioeconomic scenario, SSP2. These maps demonstrate that the effects of climate change on the food supply of beef will not be large. Nevertheless, these results also demonstrate that climate change will adversely affect food supply of other meats, poultry eggs, and raw milk in many countries.

4. Conclusions

Expected climate change effects on food supply and demand were investigated using a world food model: a partial equilibrium model. The core of this model is the crop sector. The yield functions reflect an inversed U shape relation between temperature and yield. Long-run simulation becomes available using crop yield functions.

After feed production and the livestock sector are added to the crop sector, climate change effects on livestock supply are analyzed. Climate change is expected to

decrease crop production severely in some countries. However, crop production will rise in other countries. Regarding feed supply, climate change effects are expected to engender decreased production in some countries, especially in South American countries. Consequently, the supply of livestock products is expected to decrease worldwide.

This expected decrease in livestock supply will engender a tendency of lower consumption of protein and

other fundamentally important nutrients, especially in economically developing countries. Decreased nutrition supply resulting from climate change in low-latitude countries such as sub-Saharan African or South Asian countries looms as a potential threat to future generations. To resolve such difficulties, development of high-CO₂-concentration tolerant maize or high-temperature tolerant rice varieties are desired as technologies for climate change adaptation, in addition to facilitation of feed trade.

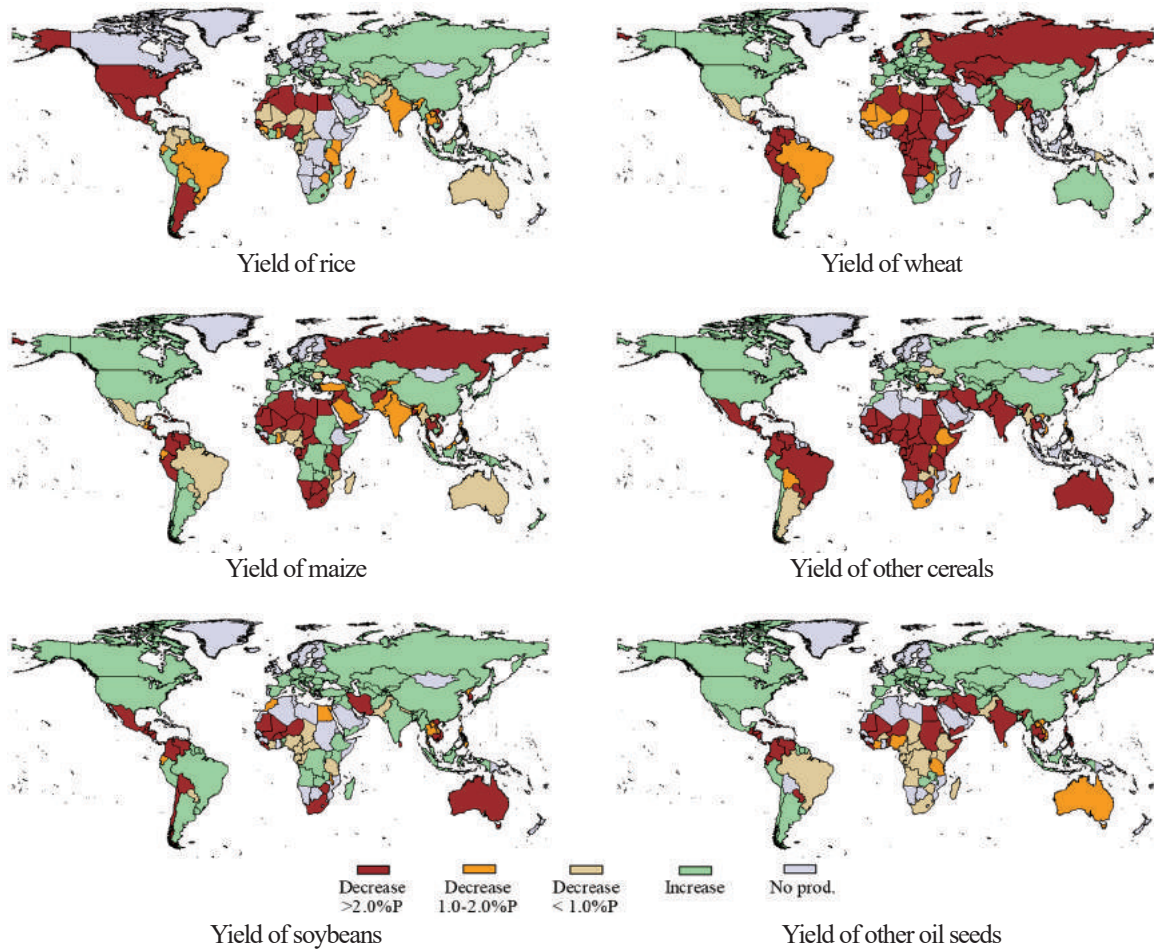


Figure 6-1. Changes in crop yields attributable to climate change in the 2050s.
 Note: Comparing results of RCP6.0 and the baseline under SSP2 are portrayed.
 The year of launchpad data is 2010.
 %P: percent point

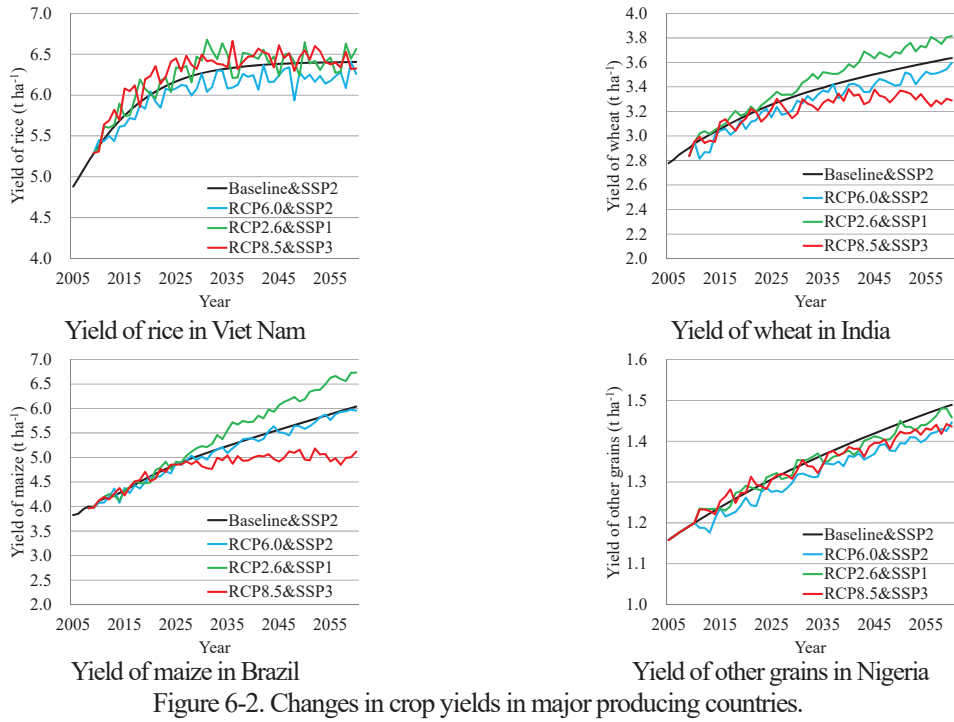


Figure 6-2. Changes in crop yields in major producing countries.

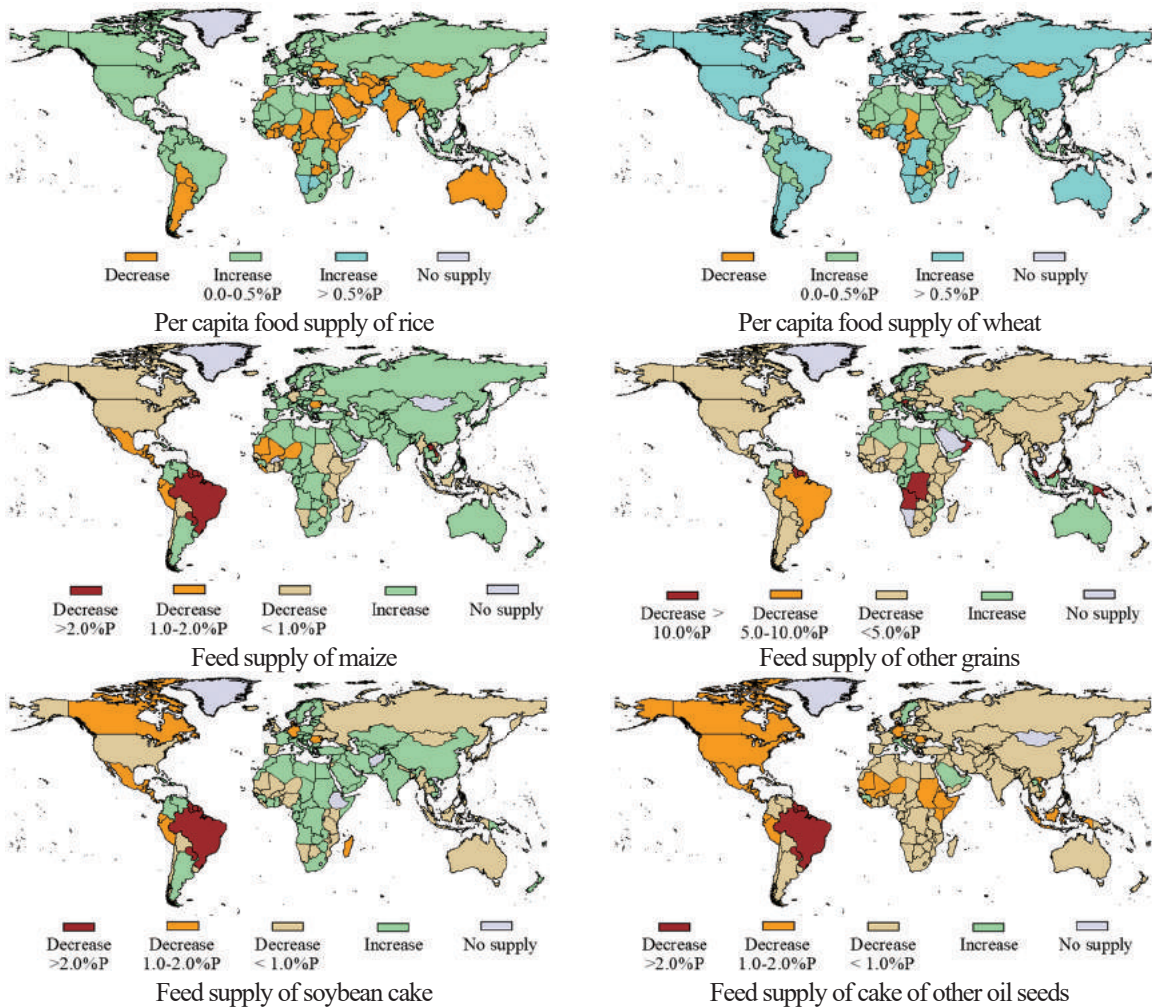


Fig. 6-3. Changes in crop supply caused by climate change in the 2050s.

Note: %P: percent point

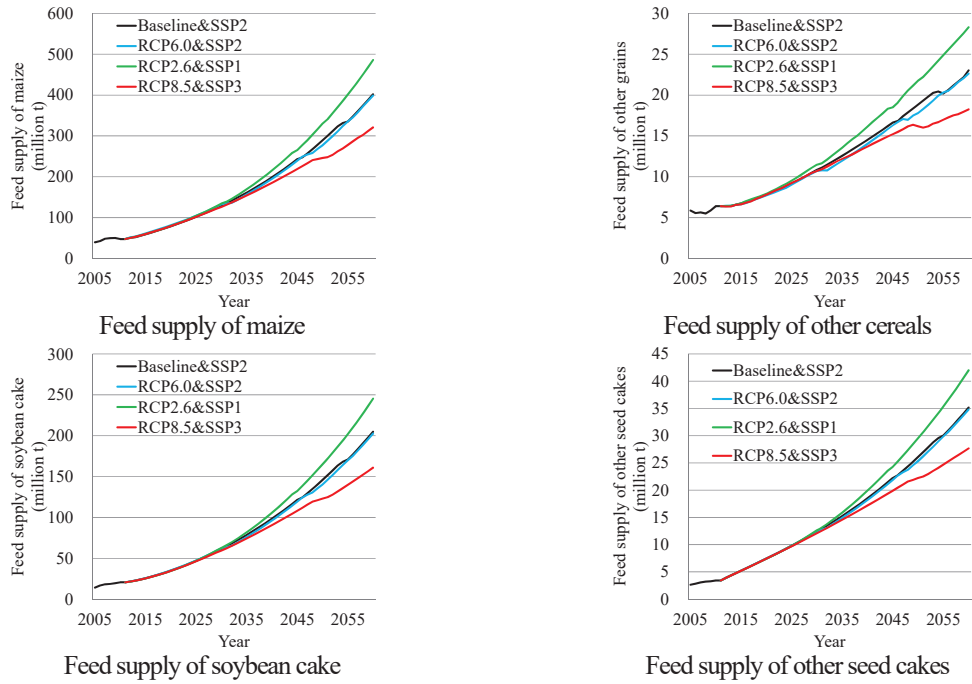


Fig. 6-4. Changes in all feed supply in South American countries.

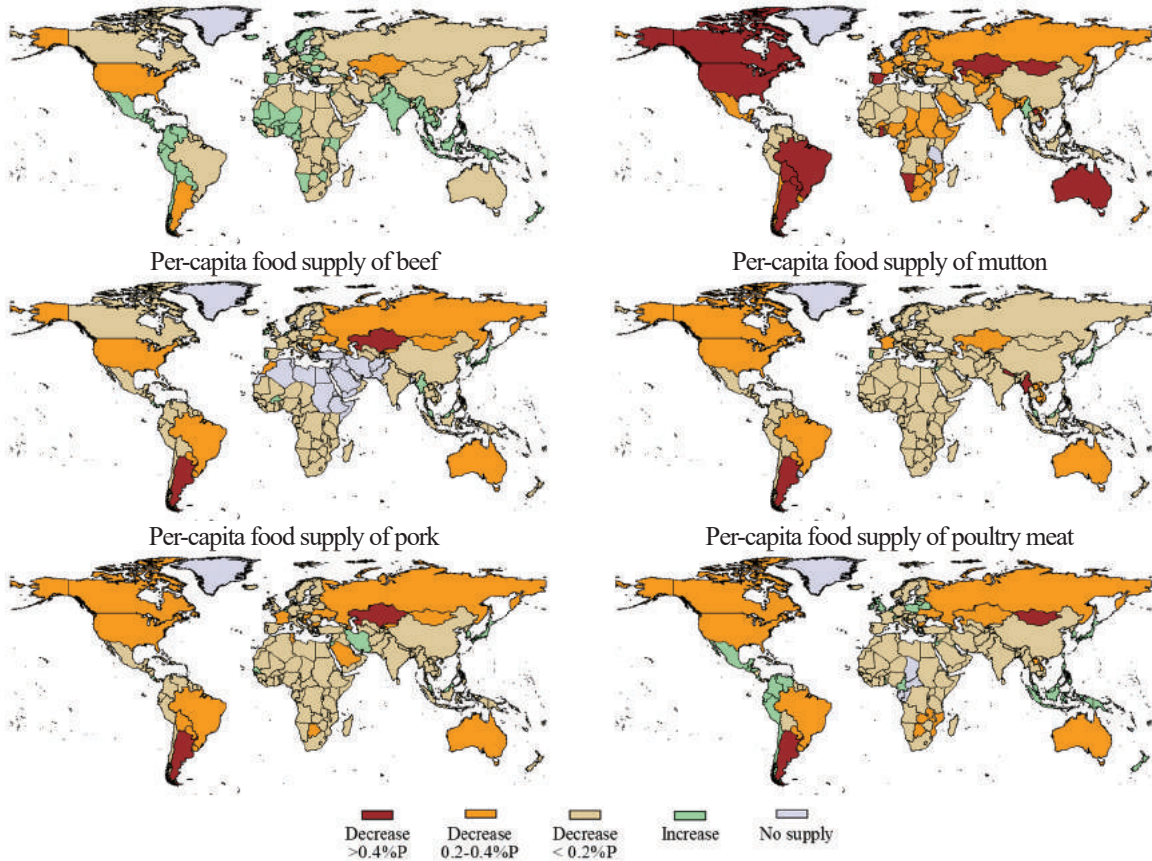


Figure 6-5. Changes in livestock product supply caused by climate change in the 2050s.
 Note: %P: percent point

Chapter 7. General conclusions

Estimating functions such as planted area functions or demand functions is time-consuming work for a model with one commodity in a specific country. To produce a supply and demand model of an agricultural commodity in a specific country, 2–3 years were needed.

Results of crop yield estimation in our project have indicated a grid level in the world. Therefore, the target regions must be split into units that are as small as possible.

Obtaining price elasticities of supply, input demand and food demand are crucially important issues that must be resolved to develop a world food model. The Cobb–Douglas production function is quite popular in economic research. Nevertheless, the elasticity of substitution is well-known to be limited to one. Although this is a tight restriction, this function presents useful benefits.

The first-order condition of profit maximization reveals that the parameters of the production functions of each input are equal to the cost share to the output. Therefore, the parameters of the production functions can be ascertained if the cost shares are obtained.

Input demand functions will be derived by solving the profit maximization problem if one-time parameters of the Cobb–Douglas production function are obtained. Furthermore, by substituting these input demand functions into the production function, a supply function will be obtained.

Results of this study show how to ascertain the price elasticity of supply and input demand based on a Cobb–Douglas production function. This framework is extended to the food demand side: the price elasticity of food demand is derived from the input demand system of agricultural goods. An important shortcoming of this demand approach is that income elasticities are independent of the system. If commodities are aggregated to groups such as cereals or meats, then elasticities of demand will be easily estimated using the system-wide approach proposed by Theil (1980). This commodity block-wise system must be used to support the consumer demand analysis in the world.

For this study, the crop yields are estimated using

logistic and log linear functions with variable climate factors. The results are reasonable. Especially, the results revealed that not only Sub-Saharan African and south Asian countries but also some economically developed countries are expected to be adversely affected by climate change.

For further precise analyses, estimated yields of the CYGMA crop model (Iizumi et al., 2017) are used in a revised version of the world model applied for the study described herein. In addition, updating forecasts of macro-economic variables is necessary because recent economic conditions are stagnating because of inward-looking policies in many countries.

This model will be useful for trend analyses of supply of nutrition elements and economic evaluations of new agricultural technologies such as dissemination of high-temperature tolerant varieties of crops in economically developing countries under climate change. Corresponding to these purposes, tubers and vegetables will be added to the target commodities of this model.

It can be easily extended to the target commodities and countries if production cost shares and launch-pad data available even for a short period. Therefore, the framework of this model is suitable for evaluating the effects of climate change on food supply in economically developing countries.

The purpose of this study will be attained if this model is used as a platform for analyses of climate change effects.

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Appendix 1 Data for crop model
Table A-1-1. Data for crop model for rice.

CNO	PID	CID	LAT	N-S	PM	HM	N	GC	CROPS	TYPE	ADAP.G.	YIELD07	INP	HI	LAI	Dependence of rate of leaf photosynthesis (pm) on temperature (°C)										
Country No.	Prod. code	Country code	Latitude	N:1 S:2	Plant month	Harvest month	Grow-ing day	N index	Crop	Type	Adapta-bility group	Yield in 2007	Input level	Har-vest index	Leaf area index	5	10	15	20	25	30	35	30	35	40	45
1	RI	AUS	4	2	10.0	4.0	210.0	4.0	Japonica	wetland	C3/II	9.159	3.0	0.40	6.0	0	5	15	30	35	35	30	5	0		
2	RI	NZL	5	2	10.0	4.0	210.0	4.0	Japonica	wetland	C3/II	0.000														
3	RI	XOC	2	2	10.0	4.0	210.0	4.0	Japonica	wetland	C3/II	2.502	1.0	0.30	3.0	0	5	15	30	35	35	30	5	0		
4	RI	CHN	4	1	4.0	4.0	150.0	4.0	Japonica	wetland	C3/II	6.418	3.0	0.40	6.0	0	5	15	30	35	35	30	5	0		
5	RI	HKG	3	1	4.0	9.0	150.0	4.0	Japonica	wetland	C3/II	0.000														
6	RI	JPN	5	1	4.5	10.0	165.0	4.0	Japonica	wetland	C3/II	6.542	3.0	0.40	6.0	0	5	15	30	35	35	30	5	0		
7	RI	KOR	5	1	6.5	10.5	120.0	2.0	Japonica	wetland	C3/II	6.820	3.0	0.40	5.0	0	5	15	30	35	35	30	5	0		
8	RI	MNG	5	1	5.5	9.0	105.0	1.0	Japonica	wetland	C3/II	0.000														
9	RI	TWN	3	1	2.0	6.0	120.0	2.0	Japonica	wetland	C3/II	0.000														
10	RI	XEA	5	1	5.5	9.5	120.0	2.0	Japonica	wetland	C3/II	4.157	2.0	0.35	4.0	0	5	15	30	35	35	30	5	0		
11	RI	BRN	1	1	7.0	2.0	240.0	4.0	Indica	wetland	C3/II	0.745	1.0	0.30	3.0	0	0	15	30	35	35	30	5	0		
12	RI	KHM	2	1	6.5	0.5	210.0	4.0	Indica	wetland	C3/II	2.619	1.0	0.30	3.0	0	0	15	30	35	35	30	5	0		
13	RI	IDN	1	2	0.5	4.0	105.0	1.0	Japonica	wetland	C3/II	4.740	2.0	0.35	3.7	0	5	15	30	35	35	30	5	0		
14	RI	LAO	3	1	7.0	11.5	135.0	3.0	Indica	wetland	C3/II	3.455	2.0	0.38	4.5	0	0	15	30	35	35	30	5	0		
15	RI	MYS	1	1	7.0	2.0	240.0	4.0	Indica	wetland	C3/II	3.502	2.0	0.38	4.8	0	0	15	30	35	35	30	5	0		
16	RI	PHL	2	1	8.0	12.0	120.0	2.0	Indica	wetland	C3/II	3.752	2.0	0.38	4.0	0	0	15	30	35	35	30	5	0		
17	RI	SGP	1	1	7.0	2.0	240.0	4.0	Indica	wetland	C3/II	0.000														
18	RI	THA	2	1	6.5	0.5	210.0	4.0	Indica	wetland	C3/II	2.962	1.0	0.30	3.0	0	0	15	30	35	35	30	5	0		
19	RI	VNM	2	1	6.5	9.5	90.0	1.0	Indica	wetland	C3/II	5.035	3.0	0.45	5.0	0	0	15	30	35	35	30	5	0		
20	RI	XSE	3	1	6.0	12.0	180.0	4.0	Indica	wetland	C3/II	3.916	2.0	0.38	4.8	0	0	15	30	35	35	30	5	0		
21	RI	BGD	3	1	4.0	8.0	120.0	2.0	Indica	wetland	C3/II	4.027	2.0	0.38	4.0	0	0	15	30	35	35	30	5	0		
22	RI	IND	3	1	8.0	1.5	195.0	4.0	Indica	wetland	C3/II	3.295	2.0	0.38	4.8	0	0	15	30	35	35	30	5	0		
23	RI	NPL	4	1	6.5	11.0	135.0	3.0	Indica	wetland	C3/II	2.683	1.0	0.30	3.0	0	0	15	30	35	35	30	5	0		
24	RI	PAK	4	1	6.0	10.5	135.0	3.0	Indica	wetland	C3/II	3.333	2.0	0.38	4.5	0	0	15	30	35	35	30	5	0		
25	RI	LKA	2	1	4.5	8.5	120.0	2.0	Indica	wetland	C3/II	3.728	2.0	0.38	4.0	0	0	15	30	35	35	30	5	0		
26	RI	XSA	4	1	8.0	1.5	195.0	4.0	Indica	wetland	C3/II	3.250	2.0	0.38	4.8	0	0	15	30	35	35	30	5	0		
27	RI	CAN	5	1	5.0	9.0	120.0	2.0	Indica	wetland	C3/II	0.000														
28	RI	USA	5	1	5.0	9.0	120.0	2.0	Indica	wetland	C3/II	7.832	3.0	0.45	5.5	0	0	15	30	35	35	30	5	0		
29	RI	MEX	3	1	5.5	11.5	180.0	4.0	Indica	wetland	C3/II	4.467	2.0	0.38	4.8	0	0	15	30	35	35	30	5	0		
30	RI	XNA	4	1	5.5	11.5	180.0	4.0	Indica	wetland	C3/II	0.000														
31	RI	ARG	4	2	11.0	5.0	210.0	4.0	Indica	wetland	C3/II	6.816	3.0	0.45	6.5	0	0	15	30	35	35	30	5	0		
32	RI	BOL	3	2	10.5	2.0	135.0	3.0	Indica	wetland	C3/II	2.299	1.0	0.30	3.0	0	0	15	30	35	35	30	5	0		
33	RI	BRA	2	2	3.5	10.0	195.0	4.0	Indica	wetland	C3/II	3.979	2.0	0.38	4.8	0	0	15	30	35	35	30	5	0		
34	RI	CHL	4	2	10.5	3.5	180.0	4.0	Indica	wetland	C3/II	5.533	3.0	0.45	6.5	0	0	15	30	35	35	30	5	0		
35	RI	COL	1	1	3.5	7.0	105.0	1.0	Indica	wetland	C3/II	6.078	3.0	0.45	5.0	0	0	15	30	35	35	30	5	0		
36	RI	ECU	1	2	1.0	5.0	120.0	2.0	Indica	wetland	C3/II	4.206	2.0	0.38	4.0	0	0	15	30	35	35	30	5	0		
37	RI	PRY	3	2	10.5	2.0	135.0	3.0	Indica	wetland	C3/II	3.439	2.0	0.38	4.5	0	0	15	30	35	35	30	5	0		
38	RI	PER	2	2	1.5	6.0	135.0	3.0	Indica	wetland	C3/II	7.131	3.0	0.45	6.0	0	0	15	30	35	35	30	5	0		
39	RI	URY	4	2	11.0	5.0	210.0	4.0	Indica	wetland	C3/II	7.691	3.0	0.45	6.5	0	0	15	30	35	35	30	5	0		
40	RI	VEN	1	1	5.0	10.0	150.0	4.0	Japonica	wetland	C3/II	5.058	3.0	0.40	6.0	0	5	15	30	35	35	30	5	0		
41	RI	XSM	1	1	5.5	9.5	120.0	2.0	Japonica	wetland	C3/II	4.244	2.0	0.35	4.0	0	5	15	30	35	35	30	5	0		
42	RI	CRI	2	1	6.5	9.5	90.0	1.0	Japonica	wetland	C3/II	3.974	2.0	0.35	3.7	0	5	15	30	35	35	30	5	0		
43	RI	GTM	2	1	4.5	10.0	165.0	4.0	Japonica	wetland	C3/II	2.643	1.0	0.30	3.0	0	5	15	30	35	35	30	5	0		
44	RI	HND	3	1	4.5	9.5	150.0	4.0	Japonica	wetland	C3/II	5.054	3.0	0.40	6.0	0	5	15	30	35	35	30	5	0		
45	RI	NIC	2	1	6.5	9.5	90.0	1.0	Japonica	wetland	C3/II	3.864	2.0	0.35	3.7	0	5	15	30	35	35	30	5	0		
46	RI	PAN	2	1	4.5	9.0	135.0	3.0	Japonica	wetland	C3/II	2.653	1.0	0.30	3.0	0	5	15	30	35	35	30	5	0		

Table A-1-2. Data for crop model for wheat (continued).

CNO	PID	CID	LAT	N-S	PM	HM	N	GC	CROPS	TYPE	ADAP.G.	YIELD07	INP	HI	LAI	Dependence of rate of leaf photosynthesis (pm) on temperature (°C)									
Country No.	Prod. code	Country code	Latitude	N:S	Plant month	Harvest month	Growing day	N index	Crop	Type	Adaptability group	Yield in 2007	Input level	Harvest index	Leaf area index	5	10	15	20	25	30	35	40	45	
47	WH	SLV	3	1	11.0	5.0	210.0	4.0	Wheat	winter	C3/I	0.000	3.0	0.50	5.5	5	15	25	20	10	0	0	0	0	
48	WH	XCA	3	1	11.0	5.0	210.0	4.0	Wheat	winter	C3/I	0.000	3.0	0.50	5.5	5	15	25	20	10	0	0	0	0	
49	WH	DOM	2	1	11.0	5.0	210.0	4.0	Wheat	winter	C3/I	0.000	1.0	0.30	2.5	5	15	25	20	10	0	0	0	0	
50	WH	JAM	2	1	11.0	5.0	210.0	4.0	Wheat	winter	C3/I	0.000	3.0	0.50	5.5	5	15	25	20	10	0	0	0	0	
51	WH	PRI	2	1	11.0	5.0	210.0	4.0	Wheat	winter	C3/I	0.000	3.0	0.50	5.5	5	15	25	20	10	0	0	0	0	
52	WH	TTO	2	1	4.5	10.0	165.0	4.0	Wheat	winter	C3/I	0.000	2.0	0.40	4.0	5	15	25	20	10	0	0	0	0	
53	WH	XCB	3	1	11.0	5.0	210.0	4.0	Wheat	winter	C3/I	0.000	3.0	0.50	5.5	5	15	25	20	10	0	0	0	0	
54	WH	AUT	5	1	10.0	8.0	330.0	4.0	Wheat	winter	C3/I	5.125	3.0	0.50	5.5	5	15	25	20	10	0	0	0	0	
55	WH	BEL	5	1	10.5	7.5	300.0	4.0	Wheat	winter	C3/I	8.301	3.0	0.50	5.5	5	15	25	20	10	0	0	0	0	
56	WH	CYP	4	1	10.0	6.0	270.0	4.0	Wheat	winter	C3/I	1.751	1.0	0.30	2.5	5	15	25	20	10	0	0	0	0	
57	WH	CZE	5	1	9.0	7.5	345.0	4.0	Wheat	winter	C3/I	5.041	3.0	0.50	5.5	5	15	25	20	10	0	0	0	0	
58	WH	DNK	5	1	10.0	8.0	330.0	4.0	Wheat	winter	C3/I	7.140	3.0	0.50	5.5	5	15	25	20	10	0	0	0	0	
59	WH	EST	5	1	9.5	7.5	345.0	4.0	Wheat	winter	C3/I	3.025	2.0	0.40	4.0	5	15	25	20	10	0	0	0	0	
60	WH	FIN	5	1	9.5	6.5	300.0	4.0	Wheat	winter	C3/I	3.710	2.0	0.40	4.0	5	15	25	20	10	0	0	0	0	
61	WH	FRA	5	1	10.5	7.5	300.0	4.0	Wheat	winter	C3/I	6.699	3.0	0.50	5.5	5	15	25	20	10	0	0	0	0	
62	WH	DEU	5	1	10.0	8.0	330.0	4.0	Wheat	winter	C3/I	7.416	3.0	0.50	5.5	5	15	25	20	10	0	0	0	0	
63	WH	GRC	5	1	10.0	6.0	270.0	4.0	Wheat	winter	C3/I	2.491	2.0	0.40	4.0	5	15	25	20	10	0	0	0	0	
64	WH	HUN	5	1	10.0	6.5	285.0	4.0	Wheat	winter	C3/I	4.214	3.0	0.50	5.5	5	15	25	20	10	0	0	0	0	
65	WH	IRL	5	1	10.5	7.5	300.0	4.0	Wheat	winter	C3/I	8.893	3.0	0.50	5.5	5	15	25	20	10	0	0	0	0	
66	WH	ITA	5	1	10.0	6.5	285.0	4.0	Wheat	winter	C3/I	3.671	2.0	0.40	4.0	5	15	25	20	10	0	0	0	0	
67	WH	LVA	5	1	9.0	7.5	345.0	4.0	Wheat	winter	C3/I	3.411	2.0	0.40	4.0	5	15	25	20	10	0	0	0	0	
68	WH	LTU	5	1	9.0	7.5	345.0	4.0	Wheat	winter	C3/I	3.515	2.0	0.40	4.0	5	15	25	20	10	0	0	0	0	
69	WH	LUX	5	1	10.5	7.5	300.0	4.0	Wheat	winter	C3/I	6.077	3.0	0.50	5.5	5	15	25	20	10	0	0	0	0	
70	WH	MLT	5	1	10.0	6.5	285.0	4.0	Wheat	winter	C3/I	4.283	3.0	0.50	5.5	5	15	25	20	10	0	0	0	0	
71	WH	NLD	5	1	10.0	8.0	330.0	4.0	Wheat	winter	C3/I	8.065	3.0	0.50	5.5	5	15	25	20	10	0	0	0	0	
72	WH	POL	5	1	9.5	7.5	330.0	4.0	Wheat	winter	C3/I	3.751	2.0	0.40	4.0	5	15	25	20	10	0	0	0	0	
73	WH	PRT	5	1	11.5	6.5	240.0	4.0	Wheat	winter	C3/I	2.289	2.0	0.40	4.0	5	15	25	20	10	0	0	0	0	
74	WH	SVK	5	1	9.0	7.5	345.0	4.0	Wheat	winter	C3/I	4.174	3.0	0.50	5.5	5	15	25	20	10	0	0	0	0	
75	WH	SVN	5	1	9.5	7.5	330.0	4.0	Wheat	winter	C3/I	4.299	3.0	0.50	5.5	5	15	25	20	10	0	0	0	0	
76	WH	ESP	5	1	11.5	6.5	240.0	4.0	Wheat	winter	C3/I	3.231	2.0	0.40	4.0	5	15	25	20	10	0	0	0	0	
77	WH	SWE	5	1	9.5	6.5	300.0	4.0	Wheat	winter	C3/I	5.943	3.0	0.50	5.5	5	15	25	20	10	0	0	0	0	
78	WH	GBR	5	1	10.5	7.5	300.0	4.0	Wheat	winter	C3/I	7.847	3.0	0.50	5.5	5	15	25	20	10	0	0	0	0	
79	WH	CHE	5	1	10.0	6.5	285.0	4.0	Wheat	winter	C3/I	5.930	3.0	0.50	5.5	5	15	25	20	10	0	0	0	0	
80	WH	NOR	5	1	9.5	6.5	300.0	4.0	Wheat	winter	C3/I	4.475	3.0	0.50	5.5	5	15	25	20	10	0	0	0	0	
81	WH	XEF	5	1	9.5	6.5	300.0	4.0	Wheat	winter	C3/I	0.000	2.0	0.40	4.0	5	15	25	20	10	0	0	0	0	
82	WH	ALB	5	1	9.5	7.0	315.0	4.0	Wheat	winter	C3/I	3.548	2.0	0.40	4.0	5	15	25	20	10	0	0	0	0	
83	WH	BGR	5	1	9.5	7.0	315.0	4.0	Wheat	winter	C3/I	3.256	2.0	0.40	4.0	5	15	25	20	10	0	0	0	0	
84	WH	BLR	5	1	9.0	7.5	345.0	4.0	Wheat	winter	C3/I	3.357	2.0	0.40	4.0	5	15	25	20	10	0	0	0	0	
85	WH	HRV	5	1	9.5	7.5	330.0	4.0	Wheat	winter	C3/I	4.902	3.0	0.50	5.5	5	15	25	20	10	0	0	0	0	
86	WH	ROU	5	1	9.5	7.5	330.0	4.0	Wheat	winter	C3/I	2.602	2.0	0.40	4.0	5	15	25	20	10	0	0	0	0	
87	WH	RUS	5	1	5.0	8.5	105.0	1.0	Wheat	spring	C3/I	2.165	2.0	0.30	2.6	5	15	20	15	5	0	0	0	0	
88	WH	UKR	5	1	9.0	7.5	345.0	4.0	Wheat	winter	C3/I	2.848	2.0	0.40	4.0	5	15	25	20	10	0	0	0	0	
89	WH	XEE	5	1	9.0	7.5	345.0	4.0	Wheat	winter	C3/I	2.244	2.0	0.40	4.0	5	15	25	20	10	0	0	0	0	
90	WH	XER	5	1	9.5	7.5	330.0	4.0	Wheat	winter	C3/I	3.577	2.0	0.40	4.0	5	15	25	20	10	0	0	0	0	
91	WH	KAZ	5	1	5.0	8.5	105.0	1.0	Wheat	spring	C3/I	1.135	1.0	0.20	1.8	5	15	20	15	5	0	0	0	0	
92	WH	KGZ	5	1	5.0	8.5	105.0	1.0	Wheat	spring	C3/I	2.002	2.0	0.30	2.6	5	15	20	15	5	0	0	0	0	
93	WH	XSU	5	1	5.0	8.5	105.0	1.0	Wheat	sub-tropics	C3/I	3.683	2.0	0.35	3.0	5	15	20	15	5	0	0	0	0	

Table A-1-2. Data for crop model for wheat (continued).

CNO	PID	CID	LAT	N-S	PM	HM	N	GC	CROPS	TYPE	ADAP.G.	YIELD07	INP	HI	LAI	Dependence of rate of leaf photosynthesis (pm) on temperature (°C)									
Country No.	Prod. code	Country code	Latitude	N:S	Plant month	Harvest month	Growing day	N index	Crop	Type	Adaptability group	Yield in 2007	Input level	Harvest index	Leaf area index	5	10	15	20	25	30	35	40	45	
94	WH	ARM	5	1	5.0	8.5	105.0	1.0	Wheat	sub-tropics	C3/I	2.201	2.0	0.35	3.0	5	15	20	20	15	5	0	0	0	
95	WH	AZE	5	1	5.0	8.5	105.0	1.0	Wheat	sub-tropics	C3/I	2.667	2.0	0.35	3.0	5	15	20	20	15	5	0	0	0	
96	WH	GEO	5	1	5.0	8.5	105.0	1.0	Wheat	sub-tropics	C3/I	1.533	1.0	0.25	2.0	5	15	20	20	15	5	0	0	0	
97	WH	BHR	4	1	10.0	6.0	270.0	4.0	Wheat	sub-tropics	C3/I	0.000	2.0	0.35	3.0	5	15	25	25	20	15	5	0	0	
98	WH	IRN	4	1	10.0	6.0	270.0	4.0	Wheat	sub-tropics	C3/I	2.027	2.0	0.35	3.8	5	15	25	25	20	15	5	0	0	
99	WH	ISR	4	1	10.0	6.0	270.0	4.0	Wheat	sub-tropics	C3/I	1.514	1.0	0.25	2.5	5	15	25	25	20	15	5	0	0	
100	WH	KWT	4	1	10.0	6.0	270.0	4.0	Wheat	sub-tropics	C3/I	2.162	2.0	0.35	3.8	5	15	25	25	20	15	5	0	0	
101	WH	JOR	4	1	10.0	6.0	270.0	4.0	Wheat	sub-tropics	C3/I	0.831	1.0	0.25	2.5	5	15	25	25	20	15	5	0	0	
102	WH	OMN	3	1	10.0	6.0	270.0	4.0	Wheat	tropics	C3/I	2.973	2.0	0.30	3.8	5	15	25	25	20	15	5	0	0	
103	WH	QAT	3	1	10.0	6.0	270.0	4.0	Wheat	sub-tropics	C3/I	2.487	2.0	0.35	3.8	5	15	25	25	20	15	5	0	0	
104	WH	SAU	3	1	10.0	6.0	270.0	4.0	Wheat	sub-tropics	C3/I	5.798	3.0	0.45	5.0	5	15	25	25	20	15	5	0	0	
105	WH	TUR	5	1	10.0	6.0	270.0	4.0	Wheat	sub-tropics	C3/I	2.228	2.0	0.35	3.8	5	15	25	25	20	15	5	0	0	
106	WH	ARE	3	1	10.0	6.0	270.0	4.0	Wheat	sub-tropics	C3/I	2.867	2.0	0.35	3.8	5	15	25	25	20	15	5	0	0	
107	WH	XWS	4	1	10.0	6.0	270.0	4.0	Wheat	sub-tropics	C3/I	1.738	1.0	0.25	2.5	5	15	25	25	20	15	5	0	0	
108	WH	EGY	4	1	10.0	6.0	270.0	4.0	Wheat	sub-tropics	C3/I	6.467	3.0	0.45	5.0	5	15	25	25	20	15	5	0	0	
109	WH	MAR	4	1	11.5	5.0	195.0	4.0	Wheat	sub-tropics	C3/I	1.324	1.0	0.25	2.5	5	15	25	25	20	15	5	0	0	
110	WH	TUN	4	1	11.5	5.0	195.0	4.0	Wheat	sub-tropics	C3/I	1.675	1.0	0.25	2.5	5	15	25	25	20	15	5	0	0	
111	WH	XNF	4	1	11.5	5.0	195.0	4.0	Wheat	sub-tropics	C3/I	1.255	1.0	0.25	2.5	5	15	25	25	20	15	5	0	0	
112	WH	BEN	2	1	11.5	3.0	135.0	4.0	Wheat	sub-tropics	C3/I	0.000	1.0	0.25	2.5	5	15	25	25	20	15	5	0	0	
113	WH	BFA	2	1	11.5	3.0	135.0	4.0	Wheat	sub-tropics	C3/I	0.000	1.0	0.25	2.5	5	15	25	25	20	15	5	0	0	
114	WH	CMR	1	1	11.5	3.0	135.0	2.0	Wheat	tropics	C3/I	1.244	1.0	0.20	2.3	5	15	25	25	20	15	5	0	0	
115	WH	CIV	2	1	11.5	3.0	135.0	3.0	Wheat	tropics	C3/I	0.000	1.0	0.20	2.3	5	15	25	25	20	15	5	0	0	
116	WH	GHA	2	1	11.5	3.0	135.0	3.0	Wheat	tropics	C3/I	0.000	1.0	0.20	2.3	5	15	25	25	20	15	5	0	0	
117	WH	GIN	2	1	11.5	3.0	135.0	3.0	Wheat	tropics	C3/I	0.000	1.0	0.20	2.3	5	15	25	25	20	15	5	0	0	
118	WH	NGA	2	1	11.5	3.0	135.0	2.0	Wheat	tropics	C3/I	1.492	1.0	0.20	2.3	5	15	25	25	20	15	5	0	0	
119	WH	SEN	2	1	11.5	3.0	135.0	2.0	Wheat	tropics	C3/I	0.000	1.0	0.20	2.3	5	15	25	25	20	15	5	0	0	
120	WH	TGO	2	1	11.5	3.0	135.0	2.0	Wheat	tropics	C3/I	0.000	1.0	0.20	2.3	5	15	25	25	20	15	5	0	0	
121	WH	XWF	2	1	11.5	3.0	135.0	2.0	Wheat	tropics	C3/I	1.923	1.0	0.20	2.3	5	15	25	25	20	15	5	0	0	
122	WH	XCF	1	1	11.5	3.0	135.0	2.0	Wheat	tropics	C3/I	1.633	1.0	0.20	2.3	5	15	25	25	20	15	5	0	0	
123	WH	XAC	1	1	11.5	3.0	135.0	2.0	Wheat	tropics	C3/I	1.466	1.0	0.20	2.3	5	15	25	25	20	15	5	0	0	
124	WH	ETH	2	1	3.5	7.0	105.0	1.0	Wheat	tropics	C3/I	1.713	1.0	0.20	1.0	5	15	25	25	20	15	5	0	0	
125	WH	KEN	1	1	3.0	9.0	180.0	4.0	Wheat	tropics	C3/I	2.518	2.0	0.30	3.8	5	15	25	25	20	15	5	0	0	
126	WH	MDG	3	2	5.0	9.0	120.0	2.0	Wheat	tropics	C3/I	2.297	2.0	0.30	3.4	5	15	25	25	20	15	5	0	0	
127	WH	MWI	2	2	5.0	9.0	120.0	2.0	Wheat	tropics	C3/I	1.706	1.0	0.20	2.3	5	15	25	25	20	15	5	0	0	
128	WH	MUS	3	2	5.0	9.0	120.0	2.0	Wheat	tropics	C3/I	0.000	1.0	0.20	2.3	5	15	25	25	20	15	5	0	0	
129	WH	MOZ	3	2	4.5	8.5	120.0	2.0	Wheat	tropics	C3/I	1.011	1.0	0.20	2.3	5	15	25	25	20	15	5	0	0	
130	WH	RWA	1	2	3.0	9.0	180.0	4.0	Wheat	tropics	C3/I	1.014	1.0	0.20	2.5	5	15	25	25	20	15	5	0	0	
131	WH	TZA	2	2	3.0	7.0	120.0	2.0	Wheat	tropics	C3/I	1.955	1.0	0.20	2.3	5	15	25	25	20	15	5	0	0	
132	WH	UGA	1	1	3.0	9.0	180.0	4.0	Wheat	tropics	C3/I	1.752	1.0	0.20	2.5	5	15	25	25	20	15	5	0	0	
133	WH	ZMB	3	2	5.0	9.0	120.0	2.0	Wheat	tropics	C3/I	5.794	3.0	0.40	4.5	5	15	25	25	20	15	5	0	0	
134	WH	ZWE	3	2	5.0	9.5	135.0	2.0	Wheat	tropics	C3/I	3.203	2.0	0.30	3.4	5	15	25	25	20	15	5	0	0	
135	WH	XEC	2	1	3.0	8.0	150.0	3.0	Wheat	tropics	C3/I	2.440	2.0	0.30	3.8	5	15	25	25	20	15	5	0	0	
136	WH	BWA	3	2	6.0	11.0	150.0	3.0	Wheat	tropics	C3/I	1.115	1.0	0.20	2.5	5	15	25	25	20	15	5	0	0	
137	WH	NAM	3	2	5.5	10.5	150.0	3.0	Wheat	tropics	C3/I	5.717	3.0	0.40	5.0	5	15	25	25	20	15	5	0	0	
138	WH	ZAF	4	2	6.0	11.0	150.0	3.0	Wheat	tropics	C3/I	2.871	2.0	0.30	3.8	5	15	25	25	20	15	5	0	0	
139	WH	XSC	4	2	5.5	12.0	195.0	4.0	Wheat	tropics	C3/I	0.330	1.0	0.20	2.5	5	15	25	25	20	15	5	0	0	
140	WH	XTW	2	1	3.0	8.0	150.0	4.0	Wheat	tropics	C3/I	0.000	1.0	0.20	2.5	5	15	25	25	20	15	5	0	0	

Table A-1-3. Data for crop model for maize.

CNO	PID	CID	LAT	N-S	PM	HM	N	GC	CROPS	TYPE	ADAP.G.	YIELD07	INP	HI	LAI	Dependence of rate of leaf photosynthesis (pm) on temperature (°C)									
Country No.	Prod. code	Country code	Latitude	N:S	Plant month	Harvest month	Grow-ing day	N index	Crop	Type	Adaptability group	Yield in 2007	Input level	Har-vest index	Leaf area index	5	10	15	20	25	30	35	40	45	
1	MZ	AUS	4	2	10.5	4.5	210.0	4.0	Maize	lowland	C4/III	5.200	3.0	0.45	4.5	0	0	5	45	65	65	65	45	5	
2	MZ	NZL	5	2	10.5	4.5	210.0	4.0	Maize	lowland	C4/III	11.222	3.0	0.45	4.5	0	0	5	45	65	65	65	45	5	
3	MZ	XOC	2	2	10.5	4.5	210.0	4.0	Maize	lowland	C4/III	2.844	2.0	0.35	3.3	0	0	5	45	65	65	65	45	5	
4	MZ	CHN	4	1	3.0	7.5	135.0	3.0	Maize	sub-tropics	C4/IV	5.350	3.0	0.45	4.0	0	0	5	45	65	65	65	45	5	
5	MZ	HKG	3	1	3.0	7.5	135.0	3.0	Maize	sub-tropics	C4/IV	0.000													
6	MZ	JPN	5	1	5.0	9.0	120.0	3.0	Maize	lowland	C4/III	2.527	2.0	0.35	3.3	0	0	5	45	65	65	65	45	5	
7	MZ	KOR	5	1	5.0	9.0	120.0	3.0	Maize	lowland	C4/III	4.901	3.0	0.45	4.0	0	0	5	45	65	65	65	45	5	
8	MZ	MNG	5	1	5.0	9.0	120.0	3.0	Maize	lowland	C4/III	0.000													
9	MZ	TWN	3	1	3.0	7.5	135.0	3.0	Maize	lowland	C4/III	0.000													
10	MZ	XEA	5	1	5.0	9.0	120.0	3.0	Maize	lowland	C4/III	3.219	2.0	0.35	3.3	0	0	5	45	65	65	65	45	5	
11	MZ	BRN	1	1	5.0	8.0	90.0	3.0	Maize	lowland	C4/III	0.000													
12	MZ	KHM	2	1	5.0	8.0	90.0	1.0	Maize	sub-tropics	C4/IV	3.671	2.0	0.30	2.3	0	5	40	50	50	50	40	5	0	
13	MZ	IDN	1	2	11.5	3.5	150.0	4.0	Maize	sub-tropics	C4/IV	3.736	2.0	0.33	3.5	0	5	40	50	50	50	40	5	0	
14	MZ	LAO	3	1	5.0	8.0	90.0	1.0	Maize	sub-tropics	C4/IV	4.595	3.0	0.40	3.0	0	5	40	50	50	50	40	5	0	
15	MZ	MYS	1	1	5.0	8.0	90.0	1.0	Maize	sub-tropics	C4/IV	4.476	3.0	0.40	3.0	0	5	40	50	50	50	40	5	0	
16	MZ	PHL	2	1	5.0	8.0	90.0	1.0	Maize	sub-tropics	C4/IV	2.504	2.0	0.30	2.3	0	5	40	50	50	50	40	5	0	
17	MZ	SGP	1	1	5.0	8.0	90.0	1.0	Maize	sub-tropics	C4/IV	0.000													
18	MZ	THA	2	1	5.0	8.0	90.0	1.0	Maize	sub-tropics	C4/IV	3.987	2.0	0.30	2.3	0	5	40	50	50	50	40	5	0	
19	MZ	VNM	2	1	5.0	8.0	90.0	1.0	Maize	sub-tropics	C4/IV	3.894	2.0	0.30	2.3	0	5	40	50	50	50	40	5	0	
20	MZ	XSE	3	1	5.0	8.0	90.0	1.0	Maize	sub-tropics	C4/IV	2.927	2.0	0.30	2.3	0	5	40	50	50	50	40	5	0	
21	MZ	BGD	3	1	6.0	12.0	180.0	6.0	Maize	sub-tropics	C4/IV	5.766	3.0	0.45	5.5	0	5	40	50	50	50	40	5	0	
22	MZ	IND	3	1	6.0	12.0	180.0	6.0	Maize	sub-tropics	C4/IV	2.221	2.0	0.35	4.3	0	5	40	50	50	50	40	5	0	
23	MZ	NPL	4	1	6.0	12.0	180.0	6.0	Maize	sub-tropics	C4/IV	2.096	2.0	0.35	4.3	0	5	40	50	50	50	40	5	0	
24	MZ	PAK	4	1	6.0	12.0	180.0	6.0	Maize	sub-tropics	C4/IV	3.293	2.0	0.35	4.3	0	5	40	50	50	50	40	5	0	
25	MZ	LKA	2	1	6.0	12.0	180.0	6.0	Maize	sub-tropics	C4/IV	1.771	1.0	0.25	3.0	0	5	40	50	50	50	40	5	0	
26	MZ	XSA	4	1	6.0	12.0	180.0	6.0	Maize	sub-tropics	C4/IV	2.423	2.0	0.35	4.3	0	5	40	50	50	50	40	5	0	
27	MZ	CAN	5	1	5.5	10.5	150.0	2.0	Maize	highland	C4/IV	8.682	3.0	0.35	4.0	0	0	5	45	65	65	65	45	5	
28	MZ	USA	5	1	5.0	10.5	165.0	5.0	Maize	sub-tropics	C4/IV	9.492	3.0	0.45	5.0	0	0	5	45	65	65	65	45	5	
29	MZ	MEX	3	1	5.5	11.0	165.0	5.0	Maize	sub-tropics	C4/IV	3.172	2.0	0.35	3.8	0	5	40	50	50	50	40	5	0	
30	MZ	XNA	4	1	5.5	11.0	165.0	5.0	Maize	sub-tropics	C4/IV	0.000													
31	MZ	ARG	4	2	10.0	4.0	210.0	6.0	Maize	sub-tropics	C4/IV	6.674	3.0	0.45	5.5	0	5	40	50	50	50	40	5	0	
32	MZ	BOL	3	2	11.0	4.0	180.0	2.0	Maize	highland	C4/IV	2.345	2.0	0.27	3.0	0	5	40	50	50	50	40	5	0	
33	MZ	BRA	2	2	11.0	4.0	180.0	6.0	Maize	sub-tropics	C4/IV	3.749	2.0	0.35	4.3	0	5	40	50	50	50	40	5	0	
34	MZ	CHL	4	2	10.0	4.0	210.0	2.0	Maize	highland	C4/IV	10.085	3.0	0.35	4.0	0	5	40	50	50	50	40	5	0	
35	MZ	COL	1	1	11.0	4.0	180.0	2.0	Maize	highland	C4/IV	2.691	2.0	0.27	3.0	0	5	40	50	50	50	40	5	0	
36	MZ	ECU	1	2	11.0	4.0	180.0	2.0	Maize	highland	C4/IV	2.144	2.0	0.27	3.0	0	5	40	50	50	50	40	5	0	
37	MZ	PRY	3	2	10.0	4.0	210.0	6.0	Maize	sub-tropics	C4/IV	2.539	2.0	0.35	4.3	0	5	40	50	50	50	40	5	0	
38	MZ	PER	2	2	11.0	4.0	180.0	2.0	Maize	highland	C4/IV	2.839	2.0	0.27	3.0	0	5	40	50	50	50	40	5	0	
39	MZ	URY	4	2	10.0	4.0	210.0	6.0	Maize	sub-tropics	C4/IV	4.697	3.0	0.45	5.5	0	5	40	50	50	50	40	5	0	
40	MZ	VEN	2	1	11.0	4.0	180.0	6.0	Maize	sub-tropics	C4/IV	3.544	2.0	0.35	4.3	0	5	40	50	50	50	40	5	0	
41	MZ	XSM	1	1	11.0	4.0	180.0	6.0	Maize	sub-tropics	C4/IV	1.347	1.0	0.25	3.0	0	5	40	50	50	50	40	5	0	
42	MZ	CRI	2	1	5.5	11.0	165.0	5.0	Maize	sub-tropics	C4/IV	2.004	2.0	0.35	3.8	0	5	40	50	50	50	40	5	0	
43	MZ	GTM	2	1	5.5	11.0	165.0	5.0	Maize	sub-tropics	C4/IV	2.100	2.0	0.35	3.8	0	5	40	50	50	50	40	5	0	
44	MZ	HND	3	1	5.5	11.0	165.0	5.0	Maize	sub-tropics	C4/IV	1.640	1.0	0.25	2.5	0	5	40	50	50	50	40	5	0	
45	MZ	NIC	2	1	5.5	11.0	165.0	5.0	Maize	sub-tropics	C4/IV	1.390	1.0	0.25	2.5	0	5	40	50	50	50	40	5	0	
46	MZ	PAN	2	1	5.5	11.0	165.0	5.0	Maize	sub-tropics	C4/IV	1.693	1.0	0.25	2.5	0	5	40	50	50	50	40	5	0	

Table A-1-3. Data for crop model for maize (continued).

CNO	PID	CID	LAT	N-S	PM	HM	N	GC	CROPS	TYPE	ADAP.G.	YIELD07	INP	HI	LAI	Dependence of rate of leaf photosynthesis (mm) on temperature (°C)									
Country No.	Prod. code	Country code	Latitude	N:S	Plant month	Harvest month	Growing day	N index	Crop	Type	Adaptability group	Yield in 2007	Input level	Harvest index	Leaf area index	5	10	15	20	25	30	35	40	45	
47	MZ	SLV	3	1	5.5	11.0	165.0	5.0	Maize	sub-tropics	C4/IV	3.127	2.0	0.35	3.8	0	5	40	50	50	40	5	0		
48	MZ	XCA	3	1	5.5	11.0	165.0	5.0	Maize	sub-tropics	C4/IV	2.162	2.0	0.35	3.8	0	5	40	50	50	40	5	0		
49	MZ	DOM	2	1	5.5	11.0	165.0	5.0	Maize	sub-tropics	C4/IV	1.407	1.0	0.25	2.5	0	5	40	50	50	40	5	0		
50	MZ	JAM	2	1	5.5	11.0	165.0	5.0	Maize	sub-tropics	C4/IV	1.226	1.0	0.25	2.5	0	5	40	50	50	40	5	0		
51	MZ	PRI	2	1	5.5	11.0	165.0	5.0	Maize	sub-tropics	C4/IV	1.838	1.0	0.25	2.5	0	5	40	50	50	40	5	0		
52	MZ	TTO	2	1	11.0	4.0	180.0	6.0	Maize	sub-tropics	C4/IV	2.500	2.0	0.35	4.3	0	5	40	50	50	40	5	0		
53	MZ	XGB	3	1	5.5	11.0	165.0	5.0	Maize	sub-tropics	C4/IV	1.336	1.0	0.25	2.5	0	5	40	50	50	40	5	0		
54	MZ	AUT	5	1	4.5	9.0	135.0	1.0	Maize	highland	C4/IV	10.076	3.0	0.35	3.5	0	0	5	45	65	65	45	5		
55	MZ	BEL	5	1	4.5	10.0	165.0	2.0	Maize	highland	C4/IV	11.749	3.0	0.35	4.0	0	0	5	45	65	65	45	5		
56	MZ	CYP	4	1	5.0	9.5	135.0	1.0	Maize	highland	C4/IV	0.000	3.0	0.35	3.5	0	0	5	45	65	65	45	5		
57	MZ	CZE	5	1	4.5	9.0	135.0	1.0	Maize	highland	C4/IV	7.031	3.0	0.35	3.5	0	0	5	45	65	65	45	5		
58	MZ	DNK	5	1	5.0	10.0	150.0	0.000			0.000														
59	MZ	EST	5	1	5.0	10.0	150.0	0.000			0.000														
60	MZ	FIN	5	1	5.0	10.0	150.0	0.000			0.000														
61	MZ	FRA	5	1	4.5	10.0	165.0	2.0	Maize	highland	C4/IV	9.229	3.0	0.35	4.0	0	0	5	45	65	65	45	5		
62	MZ	DEU	5	1	4.5	10.0	165.0	2.0	Maize	highland	C4/IV	9.096	3.0	0.35	4.0	0	0	5	45	65	65	45	5		
63	MZ	GRC	5	1	4.5	9.5	150.0	4.0	Maize	lowland	C4/III	10.146	3.0	0.45	4.5	0	0	5	45	65	65	45	5		
64	MZ	HUN	5	1	4.5	9.5	150.0	4.0	Maize	lowland	C4/III	6.005	3.0	0.45	4.5	0	0	5	45	65	65	45	5		
65	MZ	IRL	5	1	4.5	10.0	165.0	0.000			0.000														
66	MZ	ITA	5	1	4.0	9.5	165.0	4.0	Maize	lowland	C4/III	9.204	3.0	0.45	4.5	0	0	5	45	65	65	45	5		
67	MZ	LVA	5	1	5.0	10.0	150.0	0.000			0.000														
68	MZ	LTU	5	1	5.0	10.0	150.0	2.0	Maize	highland	C4/IV	3.792	2.0	0.27	3.0	0	0	5	45	65	65	45	5		
69	MZ	LUX	5	1	4.5	10.0	165.0	2.0	Maize	highland	C4/IV	6.687	3.0	0.35	4.0	0	0	5	45	65	65	45	5		
70	MZ	MLT	5	1	4.0	9.5	165.0	0.000			0.000														
71	MZ	NLD	5	1	4.5	10.0	165.0	2.0	Maize	highland	C4/IV	10.839	3.0	0.35	4.0	0	0	5	45	65	65	45	5		
72	MZ	POL	5	1	4.5	9.0	135.0	1.0	Maize	highland	C4/IV	5.517	3.0	0.35	3.5	0	0	5	45	65	65	45	5		
73	MZ	PRT	5	1	3.5	10.0	195.0	2.0	Maize	highland	C4/IV	5.640	3.0	0.35	4.0	0	0	5	45	65	65	45	5		
74	MZ	SVK	5	1	4.5	9.0	135.0	1.0	Maize	highland	C4/IV	5.870	3.0	0.35	3.5	0	0	5	45	65	65	45	5		
75	MZ	SVN	5	1	4.5	9.5	150.0	4.0	Maize	lowland	C4/III	7.262	3.0	0.45	4.5	0	0	5	45	65	65	45	5		
76	MZ	ESP	5	1	3.5	10.0	195.0	4.0	Maize	lowland	C4/III	9.884	3.0	0.45	4.5	0	0	5	45	65	65	45	5		
77	MZ	SWE	5	1	5.0	10.0	150.0	0.000			0.000														
78	MZ	GBR	5	1	4.5	10.0	165.0	0.000			0.000														
79	MZ	CHE	5	1	4.5	10.0	165.0	2.0	Maize	highland	C4/IV	9.440	3.0	0.35	4.0	0	0	5	45	65	65	45	5		
80	MZ	NOR	5	1	5.0	10.0	150.0	0.000			0.000														
81	MZ	XEF	5	1	4.5	10.0	165.0	0.000			0.000														
82	MZ	ALB	5	1	4.5	9.5	150.0	4.0	Maize	lowland	C4/III	4.895	3.0	0.45	4.5	0	0	5	45	65	65	45	5		
83	MZ	BGR	5	1	4.5	9.5	150.0	2.0	Maize	highland	C4/IV	3.382	2.0	0.27	3.0	0	0	5	45	65	65	45	5		
84	MZ	BUR	5	1	5.0	10.0	150.0	2.0	Maize	highland	C4/IV	4.464	3.0	0.35	4.0	0	0	5	45	65	65	45	5		
85	MZ	HRV	5	1	4.5	9.5	150.0	4.0	Maize	lowland	C4/III	6.481	3.0	0.45	4.5	0	0	5	45	65	65	45	5		
86	MZ	ROU	5	1	4.5	8.5	120.0	1.0	Maize	highland	C4/IV	2.835	2.0	0.25	2.5	0	0	5	45	65	65	45	5		
87	MZ	RUS	5	1	5.0	10.0	150.0	4.0	Maize	lowland	C4/III	3.468	2.0	0.35	3.3	0	0	5	45	65	65	45	5		
88	MZ	UKR	5	1	5.0	10.0	150.0	4.0	Maize	lowland	C4/III	4.109	3.0	0.45	4.5	0	0	5	45	65	65	45	5		
89	MZ	XFE	5	1	5.0	10.0	150.0	4.0	Maize	lowland	C4/III	2.371	2.0	0.35	3.3	0	0	5	45	65	65	45	5		
90	MZ	XER	5	1	4.5	9.5	150.0	2.0	Maize	highland	C4/IV	4.400	3.0	0.35	4.0	0	0	5	45	65	65	45	5		
91	MZ	KAZ	5	1	5.0	10.0	150.0	4.0	Maize	lowland	C4/III	4.915	3.0	0.45	4.5	0	0	5	45	65	65	45	5		
92	MZ	KGZ	5	1	5.0	10.0	150.0	4.0	Maize	lowland	C4/III	5.995	3.0	0.45	4.5	0	0	5	45	65	65	45	5		
93	MZ	XSU	5	1	5.0	10.0	150.0	4.0	Maize	lowland	C4/III	4.944	3.0	0.45	4.5	0	0	5	45	65	65	45	5		

Table A-1-3. Data for crop model for maize (continued).

CNO	PID	CID	LAT	N-S	PM	HM	N	GC	CROPS	TYPE	ADAP.G.	YIELD07	INP	HI	LAI	Dependence of rate of leaf photosynthesis (µm) on temperature (°C)									
Country No.	Prod. code	Country code	Latitude	N:1 S:2	Plant month	Harvest month	Growing day	N index	Crop	Type	Adaptability group	Yield in 2007	Input level	Harvest index	Leaf area index	5	10	15	20	25	30	35	40	45	
94	MZ	ARM	5	1	5.0	10.0	150.0	2.0	Maize	highland	C4/IV	4.667	3.0	0.35	4.0	0	0	5	45	65	65	65	45	5	
95	MZ	AZE	5	1	5.0	10.0	150.0	4.0	Maize	lowland	C4/III	4.658	3.0	0.45	4.5	0	0	5	45	65	65	65	45	5	
96	MZ	GEO	5	1	5.0	10.0	150.0	4.0	Maize	lowland	C4/III	2.189	2.0	0.35	3.3	0	0	5	45	65	65	65	45	5	
97	MZ	BHR	4	1	5.0	9.5	135.0	3.0	Maize	sub-tropics	C4/IV	0.000	3.0	0.45	4.0	0	5	40	50	50	50	40	5	0	
98	MZ	IRN	4	1	5.0	9.5	135.0	3.0	Maize	sub-tropics	C4/IV	18.241	3.0	0.45	4.0	0	5	40	50	50	50	40	5	0	
99	MZ	ISR	4	1	5.0	9.5	135.0	4.0	Maize	lowland	C4/III	18.833	3.0	0.45	4.5	0	5	40	50	50	50	40	5	0	
100	MZ	KWT	4	1	5.0	9.5	135.0	4.0	Maize	lowland	C4/III	19.880	3.0	0.45	4.5	0	5	40	50	50	50	40	5	0	
101	MZ	JOR	4	1	5.0	9.5	135.0	4.0	Maize	lowland	C4/III	0.000	3.0	0.45	4.5	0	5	40	50	50	50	40	5	0	
102	MZ	OMN	3	1	5.0	9.5	135.0	4.0	Maize	lowland	C4/III	16.048	3.0	0.45	4.5	0	5	40	50	50	50	40	5	0	
103	MZ	OAT	3	1	5.0	9.5	135.0	4.0	Maize	lowland	C4/III	5.689	3.0	0.45	4.5	0	5	40	50	50	50	40	5	0	
104	MZ	SAU	3	1	5.0	9.5	135.0	3.0	Maize	sub-tropics	C4/IV	7.049	3.0	0.45	4.0	0	5	40	50	50	50	40	5	0	
105	MZ	TUR	5	1	5.0	9.5	135.0	3.0	Maize	sub-tropics	C4/IV	0.000	2.0	0.33	3.0	0	5	40	50	50	50	40	5	0	
106	MZ	ARE	3	1	5.0	9.5	135.0	4.0	Maize	lowland	C4/III	8.132	3.0	0.45	4.5	0	5	40	50	50	50	40	5	0	
107	MZ	XWS	4	1	5.0	9.5	135.0	2.0	Maize	sub-tropics	C4/IV	0.729	1.0	0.20	2.0	0	5	40	50	50	50	40	5	0	
108	MZ	EGY	4	1	5.0	9.5	135.0	4.0	Maize	lowland	C4/III	0.000	2.0	0.33	3.0	0	5	40	50	50	50	40	5	0	
109	MZ	MAR	4	1	2.0	6.0	120.0	2.0	Maize	sub-tropics	C4/IV	2.875	2.0	0.35	3.3	0	5	40	50	50	50	40	5	0	
110	MZ	TUN	4	1	3.5	8.0	135.0	4.0	Maize	lowland	C4/III	1.124	1.0	0.20	2.0	0	5	40	50	50	50	40	5	0	
111	MZ	XNF	4	1	3.5	8.5	150.0	2.0	Maize	sub-tropics	C4/IV	1.595	1.0	0.20	1.5	0	5	40	50	50	50	40	5	0	
112	MZ	BEN	2	1	6.0	10.0	120.0	1.0	Maize	sub-tropics	C4/IV	2.074	2.0	0.33	3.5	0	5	40	50	50	50	40	5	0	
113	MZ	BFA	2	1	6.5	9.5	90.0	4.0	Maize	sub-tropics	C4/IV	2.124	2.0	0.30	2.3	0	5	40	50	50	50	40	5	0	
114	MZ	CMR	1	1	5.5	10.5	150.0	1.0	Maize	sub-tropics	C4/IV	1.593	1.0	0.25	2.5	0	5	40	50	50	50	40	5	0	
115	MZ	CIV	2	1	3.0	6.0	90.0	5.0	Maize	sub-tropics	C4/IV	1.593	1.0	0.20	1.5	0	5	40	50	50	50	40	5	0	
116	MZ	GHA	2	1	4.0	9.5	165.0	1.0	Maize	sub-tropics	C4/IV	1.593	1.0	0.20	1.5	0	5	40	50	50	50	40	5	0	
117	MZ	GIN	2	1	6.5	10.0	105.0	1.0	Maize	sub-tropics	C4/IV	1.827	1.0	0.20	1.5	0	5	40	50	50	50	40	5	0	
118	MZ	NGA	2	1	3.5	7.0	105.0	1.0	Maize	sub-tropics	C4/IV	1.443	1.0	0.20	1.5	0	5	40	50	50	50	40	5	0	
119	MZ	SEN	2	1	6.0	9.5	105.0	1.0	Maize	sub-tropics	C4/IV	1.171	1.0	0.20	2.0	0	5	40	50	50	50	40	5	0	
120	MZ	TGO	2	1	6.0	10.0	120.0	2.0	Maize	sub-tropics	C4/IV	1.383	1.0	0.20	1.5	0	5	40	50	50	50	40	5	0	
121	MZ	XWF	2	1	6.0	9.0	90.0	1.0	Maize	sub-tropics	C4/IV	0.981	1.0	0.20	2.0	0	5	40	50	50	50	40	5	0	
122	MZ	XCF	1	1	10.0	1.0	120.0	2.0	Maize	sub-tropics	C4/IV	0.696	1.0	0.20	2.0	0	5	40	50	50	50	40	5	0	
123	MZ	XAC	1	1	3.5	7.5	120.0	2.0	Maize	sub-tropics	C4/IV	2.249	2.0	0.35	3.3	0	5	40	50	50	50	40	5	0	
124	MZ	ETH	2	1	4.0	8.0	120.0	3.0	Maize	lowland	C4/III	1.642	1.0	0.25	2.5	0	5	40	50	50	50	40	5	0	
125	MZ	KEN	1	1	3.0	10.5	225.0	4.0	Maize	lowland	C4/III	1.433	1.0	0.25	2.5	0	5	40	50	50	50	40	5	0	
126	MZ	MDG	3	2	11.0	3.5	165.0	5.0	Maize	sub-tropics	C4/IV	1.929	1.0	0.20	2.0	0	5	40	50	50	50	40	5	0	
127	MZ	MWI	2	2	4.0	8.5	135.0	3.0	Maize	sub-tropics	C4/IV	8.381	3.0	0.40	3.0	0	5	40	50	50	50	40	5	0	
128	MZ	MUS	3	2	4.0	7.0	90.0	1.0	Maize	lowland	C4/III	0.874	1.0	0.20	2.0	0	5	40	50	50	50	40	5	0	
129	MZ	MOZ	3	2	10.5	2.0	135.0	3.0	Maize	sub-tropics	C4/IV	0.908	1.0	0.20	1.5	0	5	40	50	50	50	40	5	0	
130	MZ	RWA	1	2	10.5	0.0	75.0	1.0	Maize	sub-tropics	C4/IV	1.329	1.0	0.25	2.5	0	5	40	50	50	50	40	5	0	
131	MZ	TZA	2	2	11.5	4.0	165.0	5.0	Maize	sub-tropics	C4/IV	1.500	1.0	0.25	2.5	0	5	40	50	50	50	40	5	0	
132	MZ	UGA	1	1	5.0	9.0	120.0	3.0	Maize	lowland	C4/III	1.991	1.0	0.25	3.0	0	5	40	50	50	50	40	5	0	
133	MZ	ZMB	3	2	8.0	1.0	180.0	6.0	Maize	sub-tropics	C4/IV	0.604	1.0	0.25	3.0	0	5	40	50	50	50	40	5	0	
134	MZ	ZWE	3	2	11.0	5.0	210.0	6.0	Maize	sub-tropics	C4/IV	0.783	1.0	0.20	2.0	0	5	40	50	50	50	40	5	0	
135	MZ	XEC	2	1	9.5	0.5	210.0	2.0	Maize	sub-tropics	C4/IV	0.207	1.0	0.25	3.0	0	5	40	50	50	50	40	5	0	
136	MZ	BWA	3	2	11.0	5.0	210.0	6.0	Maize	sub-tropics	C4/IV	2.078	2.0	0.35	4.3	0	5	40	50	50	50	40	5	0	
137	MZ	NAM	3	2	11.0	4.0	180.0	6.0	Maize	sub-tropics	C4/IV	3.581	2.0	0.35	4.3	0	5	40	50	50	50	40	5	0	
138	MZ	ZAF	4	2	11.0	5.0	210.0	6.0	Maize	sub-tropics	C4/IV	0.643	1.0	0.25	3.0	0	5	40	50	50	50	40	5	0	
139	MZ	XSC	4	2	11.0	5.5	225.0	6.0	Maize	sub-tropics	C4/IV	0.000	1.0	0.25	3.0	0	5	40	50	50	50	40	5	0	
140	MZ	XTW	2	1	9.5	0.5	120.0	2.0	Maize	sub-tropics	C4/IV	0.000	1.0	0.25	3.0	0	5	40	50	50	50	40	5	0	

Table A-1-4. Data for crop model for soybeans.

CNO Country No.	PID Prod. code	CID Country code	LAT Lati- tude	N-S N:S	PM Plant month	HM Harvest month	N Grow- ing day	GC N index	CROPS Crop	TYPE Type	ADAPG. Adapta- bility group	YIELD07 Yield in 2007	INP Input level	HI Har- vest index	LAI Leaf area index	Dependence of rate of leaf photosynthesis (pm) on temperature (°C)											
																5	10	15	20	25	30	35	35	30	35	30	5
1	SB	AUS	4	2	10.5	4.5	210.0	3.0	Soybeans	sub-tropics	C3/II	2.358	3.0	0.30	4.0	0	5	15	30	35	35	30	5	0			
2	SB	NZL	5	2	10.5	4.5	210.0	3.0	Soybeans	sub-tropics	C3/II	0.000	3.0	0.30	4.0	0	5	15	30	35	35	30	5	0			
3	SB	XOC	2	2	10.5	4.5	210.0	2.0	Soybeans	sub-tropics	C3/II	0.000	2.0	0.23	3.0	0	5	15	30	35	35	30	5	0			
4	SB	CHN	4	1	5.0	9.0	120.0	2.0	Soybeans	sub-tropics	C3/II	1.608	2.0	0.23	3.0	0	5	15	30	35	35	30	5	0			
5	SB	HKG	3	1	5.0	9.0	120.0	2.0	Soybeans	sub-tropics	C3/II	0.000	2.0	0.23	3.0	0	5	15	30	35	35	30	5	0			
6	SB	JPN	5	1	5.0	9.0	120.0	2.0	Soybeans	sub-tropics	C3/II	1.677	2.0	0.23	3.0	0	5	15	30	35	35	30	5	0			
7	SB	KOR	5	1	5.0	9.0	120.0	2.0	Soybeans	sub-tropics	C3/II	1.665	2.0	0.23	3.0	0	5	15	30	35	35	30	5	0			
8	SB	MNG	5	1	5.0	9.0	120.0	2.0	Soybeans	sub-tropics	C3/II	0.000	2.0	0.23	3.0	0	5	15	30	35	35	30	5	0			
9	SB	TWN	3	1	5.0	9.0	120.0	2.0	Soybeans	sub-tropics	C3/II	0.000	2.0	0.23	3.0	0	5	15	30	35	35	30	5	0			
10	SB	XEA	5	1	5.0	9.0	120.0	2.0	Soybeans	sub-tropics	C3/II	1.150	2.0	0.23	3.0	0	5	15	30	35	35	30	5	0			
11	SB	BRN	1	1	5.0	8.0	90.0	1.0	Soybeans	tropics	C3/II	0.000	2.0	0.23	2.3	0	0	15	30	35	35	30	5	0			
12	SB	KHM	2	1	5.0	8.0	90.0	3.0	Soybeans	tropics	C3/II	1.508	2.0	0.23	2.3	0	0	15	30	35	35	30	5	0			
13	SB	IDN	1	2	11.5	3.5	150.0	1.0	Soybeans	tropics	C3/II	1.297	2.0	0.23	2.3	0	0	15	30	35	35	30	5	0			
14	SB	LAO	3	1	5.0	8.0	90.0	1.0	Soybeans	tropics	C3/II	1.296	2.0	0.23	2.3	0	0	15	30	35	35	30	5	0			
15	SB	MYS	1	1	5.0	8.0	90.0	1.0	Soybeans	tropics	C3/II	0.000	2.0	0.23	2.3	0	0	15	30	35	35	30	5	0			
16	SB	PHL	2	1	5.0	8.0	90.0	1.0	Soybeans	tropics	C3/II	1.361	2.0	0.23	2.3	0	0	15	30	35	35	30	5	0			
17	SB	SGP	1	1	5.0	8.0	90.0	1.0	Soybeans	tropics	C3/II	0.000	2.0	0.23	2.3	0	0	15	30	35	35	30	5	0			
18	SB	THA	2	1	5.0	8.0	90.0	1.0	Soybeans	tropics	C3/II	1.584	2.0	0.23	2.3	0	0	15	30	35	35	30	5	0			
19	SB	VNM	2	1	5.0	8.0	90.0	1.0	Soybeans	tropics	C3/II	1.421	2.0	0.23	2.3	0	0	15	30	35	35	30	5	0			
20	SB	XSE	3	1	5.0	8.0	90.0	1.0	Soybeans	tropics	C3/II	1.303	2.0	0.23	2.3	0	0	15	30	35	35	30	5	0			
21	SB	BGD	3	1	6.5	10.5	120.0	3.0	Soybeans	tropics	C3/II	1.496	2.0	0.23	3.0	0	0	15	30	35	35	30	5	0			
22	SB	IND	3	1	6.5	10.5	120.0	3.0	Soybeans	tropics	C3/II	1.113	2.0	0.23	3.0	0	0	15	30	35	35	30	5	0			
23	SB	NPL	4	1	6.5	10.5	120.0	2.0	Soybeans	sub-tropics	C3/II	0.900	1.0	0.15	2.0	0	5	15	30	35	35	30	5	0			
24	SB	PAK	4	1	6.5	10.5	120.0	2.0	Soybeans	sub-tropics	C3/II	0.767	1.0	0.15	2.0	0	5	15	30	35	35	30	5	0			
25	SB	LKA	2	1	6.5	10.5	120.0	3.0	Soybeans	tropics	C3/II	1.923	2.0	0.23	3.0	0	0	15	30	35	35	30	5	0			
26	SB	XSA	4	1	6.5	10.5	120.0	2.0	Soybeans	sub-tropics	C3/II	0.846	1.0	0.15	2.0	0	5	15	30	35	35	30	5	0			
27	SB	CAN	5	1	5.5	10.0	135.0	3.0	Soybeans	sub-tropics	C3/II	2.659	3.0	0.30	4.0	0	5	15	30	35	35	30	5	0			
28	SB	USA	5	1	5.5	10.5	150.0	3.0	Soybeans	sub-tropics	C3/II	2.787	3.0	0.30	4.0	0	5	15	30	35	35	30	5	0			
29	SB	MEX	3	1	5.5	10.5	150.0	3.0	Soybeans	sub-tropics	C3/II	1.643	2.0	0.23	3.0	0	5	15	30	35	35	30	5	0			
30	SB	XNA	4	1	5.5	10.5	150.0	3.0	Soybeans	sub-tropics	C3/II	0.000	2.0	0.23	3.0	0	5	15	30	35	35	30	5	0			
31	SB	ARG	4	2	11.5	4.5	180.0	3.0	Soybeans	sub-tropics	C3/II	2.824	3.0	0.30	4.0	0	5	15	30	35	35	30	5	0			
32	SB	BOL	3	2	11.0	4.0	180.0	3.0	Soybeans	tropics	C3/II	1.657	2.0	0.23	3.0	0	0	15	30	35	35	30	5	0			
33	SB	BRA	2	2	11.0	4.0	180.0	3.0	Soybeans	tropics	C3/II	2.670	3.0	0.30	4.0	0	0	15	30	35	35	30	5	0			
34	SB	CHL	4	2	11.5	4.5	180.0	3.0	Soybeans	sub-tropics	C3/II	0.000	3.0	0.30	4.0	0	5	15	30	35	35	30	5	0			
35	SB	COL	1	1	11.0	4.0	180.0	3.0	Soybeans	tropics	C3/II	2.052	3.0	0.30	4.0	0	0	15	30	35	35	30	5	0			
36	SB	ECU	1	2	11.0	4.5	195.0	3.0	Soybeans	sub-tropics	C3/II	1.720	2.0	0.23	3.0	0	5	15	30	35	35	30	5	0			
37	SB	PRY	3	2	11.0	4.5	195.0	3.0	Soybeans	sub-tropics	C3/II	2.263	3.0	0.30	4.0	0	5	15	30	35	35	30	5	0			
38	SB	PER	2	2	11.0	4.0	180.0	3.0	Soybeans	sub-tropics	C3/II	1.606	2.0	0.23	3.0	0	5	15	30	35	35	30	5	0			
39	SB	URY	4	2	11.5	4.5	180.0	3.0	Soybeans	sub-tropics	C3/II	2.106	3.0	0.30	4.0	0	5	15	30	35	35	30	5	0			
40	SB	VEN	2	1	11.0	4.0	180.0	3.0	Soybeans	tropics	C3/II	1.697	2.0	0.23	3.0	0	0	15	30	35	35	30	5	0			
41	SB	XSM	1	1	11.0	4.0	180.0	3.0	Soybeans	tropics	C3/II	0.952	1.0	0.15	2.0	0	0	15	30	35	35	30	5	0			
42	SB	CRI	2	1	5.5	10.5	150.0	3.0	Soybeans	tropics	C3/II	0.000	3.0	0.30	4.0	0	0	15	30	35	35	30	5	0			
43	SB	GTM	2	1	5.5	10.5	150.0	3.0	Soybeans	tropics	C3/II	2.652	3.0	0.30	4.0	0	0	15	30	35	35	30	5	0			
44	SB	HND	3	1	5.5	10.5	150.0	3.0	Soybeans	tropics	C3/II	2.215	3.0	0.30	4.0	0	0	15	30	35	35	30	5	0			
45	SB	NIC	2	1	5.5	10.5	150.0	3.0	Soybeans	tropics	C3/II	2.065	3.0	0.30	4.0	0	0	15	30	35	35	30	5	0			
46	SB	PAN	2	1	5.5	10.5	150.0	3.0	Soybeans	tropics	C3/II	0.363	1.0	0.15	2.0	0	0	15	30	35	35	30	5	0			

Table A-1-4. Data for crop model for soybeans (continued).

CNO	PID	CID	LAT	N-S	PM	HM	N	GC	CROPS	TYPE	ADAPG.	YIELD07	INP	HI	LAI	Dependence of rate of leaf photosynthesis (mm) on temperature (°C)									
Country No.	Prod. code	Country code	Latitude	N:S	Plant month	Harvest month	Grow-ing day	N index	Crop	Type	Adaptability group	Yield in 2007	Input level	Har-vest index	Leaf area index	5	10	15	20	25	30	35	40	45	
47	SB	SLV	3	1	5.5	10.5	150.0	3.0	Soybeans	tropics	C3/II	1.996	2.0	0.23	3.0	0	0	15	30	35	35	30	5	0	
48	SB	XCA	3	1	5.5	10.5	150.0	3.0	Soybeans	tropics	C3/II	1.892	2.0	0.23	3.0	0	0	15	30	35	35	30	5	0	
49	SB	DOM	2	1	5.5	10.5	150.0				0.000														
50	SB	JAM	2	1	5.5	10.5	150.0				0.000														
51	SB	PRI	2	1	5.5	10.5	150.0				0.000														
52	SB	TTO	2	1	11.0	4.0	180.0				0.000														
53	SB	XCB	3	1	5.5	10.5	150.0	3.0	Soybeans	tropics	C3/II	0.000				0	0	15	30	35	35	30	5	0	
54	SB	AUT	5	1	5.0	10.5	165.0	3.0	Soybeans	sub-tropics	C3/II	2.686	3.0	0.30	4.0	0	5	15	30	35	35	30	5	0	
55	SB	BEL	5	1	5.0	10.0	150.0				0.000														
56	SB	CYP	4	1	5.0	9.0	120.0				0.000														
57	SB	CZE	5	1	5.0	10.0	150.0	3.0	Soybeans	sub-tropics	C3/II	1.924	2.0	0.23	3.0	0	5	15	30	35	35	30	5	0	
58	SB	DNK	5	1	5.0	10.0	150.0				0.000														
59	SB	EST	5	1	5.0	10.0	150.0				0.000														
60	SB	FIN	5	1	5.0	10.0	150.0				0.000														
61	SB	FRA	5	1	5.0	10.5	165.0	3.0	Soybeans	sub-tropics	C3/II	2.738	3.0	0.30	4.0	0	5	15	30	35	35	30	5	0	
62	SB	DEU	5	1	5.0	10.0	150.0	3.0	Soybeans	sub-tropics	C3/II	1.000	1.0	0.15	2.0	0	5	15	30	35	35	30	5	0	
63	SB	GRC	5	1	5.0	10.5	165.0	3.0	Soybeans	sub-tropics	C3/II	2.000	2.0	0.23	3.0	0	5	15	30	35	35	30	5	0	
64	SB	HUN	5	1	5.0	10.5	165.0	3.0	Soybeans	sub-tropics	C3/II	2.211	3.0	0.30	4.0	0	5	15	30	35	35	30	5	0	
65	SB	IRL	5	1	5.0	10.0	150.0				0.000														
66	SB	ITA	5	1	5.0	10.5	165.0	3.0	Soybeans	sub-tropics	C3/II	3.148	3.0	0.30	4.0	0	5	15	30	35	35	30	5	0	
67	SB	LVA	5	1	5.0	10.0	150.0				0.000														
68	SB	LTU	5	1	5.0	10.0	150.0				0.000														
69	SB	LUX	5	1	5.0	10.0	150.0				0.000														
70	SB	MLT	5	1	5.0	10.5	165.0				0.000														
71	SB	NLD	5	1	5.0	10.0	150.0				0.000														
72	SB	POL	5	1	5.0	10.0	150.0	3.0	Soybeans	sub-tropics	C3/II	1.416	2.0	0.23	3.0	0	5	15	30	35	35	30	5	0	
73	SB	PRT	5	1	5.0	10.5	165.0				0.000														
74	SB	SVK	5	1	5.0	10.0	150.0	3.0	Soybeans	sub-tropics	C3/II	1.742	2.0	0.23	3.0	0	5	15	30	35	35	30	5	0	
75	SB	SVN	5	1	5.0	10.5	165.0	3.0	Soybeans	sub-tropics	C3/II	2.630	3.0	0.30	4.0	0	5	15	30	35	35	30	5	0	
76	SB	ESP	5	1	5.0	10.5	165.0	3.0	Soybeans	sub-tropics	C3/II	2.689	3.0	0.30	4.0	0	5	15	30	35	35	30	5	0	
77	SB	SWE	5	1	5.0	10.0	150.0				0.000														
78	SB	GBR	5	1	5.0	10.0	150.0	3.0	Soybeans	sub-tropics	C3/II	0.000													
79	SB	CHE	5	1	5.0	10.5	165.0				2.705	3.0	0.30	4.0	0	5	15	30	35	35	30	5	0		
80	SB	NOR	5	1	5.0	10.0	150.0				0.000														
81	SB	XEF	5	1	5.0	10.5	165.0				0.000														
82	SB	ALB	5	1	5.0	10.5	165.0	3.0	Soybeans	sub-tropics	C3/II	2.000	2.0	0.23	3.0	0	5	15	30	35	35	30	5	0	
83	SB	BGR	5	1	5.0	10.5	165.0	3.0	Soybeans	sub-tropics	C3/II	1.165	2.0	0.23	3.0	0	5	15	30	35	35	30	5	0	
84	SB	BLR	5	1	5.0	10.0	150.0				0.000														
85	SB	HRV	5	1	5.0	10.5	165.0	3.0	Soybeans	sub-tropics	C3/II	2.576	3.0	0.30	4.0	0	5	15	30	35	35	30	5	0	
86	SB	ROU	5	1	5.0	10.0	150.0	3.0	Soybeans	sub-tropics	C3/II	1.717	2.0	0.23	3.0	0	5	15	30	35	35	30	5	0	
87	SB	RUS	5	1	5.0	10.0	150.0	3.0	Soybeans	sub-tropics	C3/II	0.985	1.0	0.15	2.0	0	5	15	30	35	35	30	5	0	
88	SB	UKR	5	1	5.0	10.0	150.0	3.0	Soybeans	sub-tropics	C3/II	1.332	2.0	0.23	3.0	0	5	15	30	35	35	30	5	0	
89	SB	XEE	5	1	5.0	10.0	150.0	3.0	Soybeans	sub-tropics	C3/II	1.376	2.0	0.23	3.0	0	5	15	30	35	35	30	5	0	
90	SB	XER	5	1	5.0	10.0	150.0	3.0	Soybeans	sub-tropics	C3/II	2.395	3.0	0.30	4.0	0	5	15	30	35	35	30	5	0	
91	SB	KAZ	5	1	5.0	10.0	150.0	3.0	Soybeans	sub-tropics	C3/II	1.692	2.0	0.23	3.0	0	5	15	30	35	35	30	5	0	
92	SB	KGZ	5	1	5.0	10.0	150.0	3.0	Soybeans	sub-tropics	C3/II	0.859	1.0	0.15	2.0	0	5	15	30	35	35	30	5	0	
93	SB	XSU	5	1	5.0	10.0	150.0	3.0	Soybeans	sub-tropics	C3/II	0.082	1.0	0.15	2.0	0	5	15	30	35	35	30	5	0	

Table A-1-4. Data for crop model for soybeans (continued).

CNO	PID	CID	LAT	N-S	PM	HM	N	GC	CROPS	TYPE	ADAPG.	YIELD07	INP	HI	LAI	Dependence of rate of leaf photosynthesis (pm) on temperature (°C)									
Country No.	Prod. code	Country code	Latitude	N:S	Plant month	Harvest month	Grow-ing day	N index	Crop	Type	Adaptability group	Yield in 2007	Input level	Har-vest index	Leaf area index	5	10	15	20	25	30	35	40	45	
94	SB	ARM	5	1	5.0	10.0	150.0	3.0	Soybeans	sub-tropics	C3/II	0.000	1.0	0.15	2.0	0	5	15	30	35	35	30	5	0	
95	SB	AZE	5	1	5.0	10.0	150.0	3.0	Soybeans	sub-tropics	C3/II	0.464	3.0	0.30	4.0	0	5	15	30	35	35	30	5	0	
96	SB	GEO	5	1	5.0	10.0	150.0	2.0	Soybeans	sub-tropics	C3/II	2.638	3.0	0.30	4.0	0	5	15	30	35	35	30	5	0	
97	SB	BHR	4	1	5.0	9.0	120.0	2.0	Soybeans	sub-tropics	C3/II	0.000	3.0	0.30	4.0	0	5	15	30	35	35	30	5	0	
98	SB	IRN	4	1	5.0	9.0	120.0	2.0	Soybeans	sub-tropics	C3/II	2.327	3.0	0.30	4.0	0	5	15	30	35	35	30	5	0	
99	SB	ISR	4	1	5.0	9.0	120.0	2.0	Soybeans	sub-tropics	C3/II	0.000	3.0	0.30	4.0	0	5	15	30	35	35	30	5	0	
100	SB	KWT	4	1	5.0	9.0	120.0	2.0	Soybeans	sub-tropics	C3/II	0.000	3.0	0.30	4.0	0	5	15	30	35	35	30	5	0	
101	SB	JOR	4	1	5.0	9.0	120.0	2.0	Soybeans	sub-tropics	C3/II	0.000	3.0	0.30	4.0	0	5	15	30	35	35	30	5	0	
102	SB	OMN	3	1	5.0	9.0	120.0	2.0	Soybeans	sub-tropics	C3/II	0.000	3.0	0.30	4.0	0	5	15	30	35	35	30	5	0	
103	SB	QAT	3	1	5.0	9.0	120.0	2.0	Soybeans	sub-tropics	C3/II	0.000	3.0	0.30	4.0	0	5	15	30	35	35	30	5	0	
104	SB	SAU	3	1	5.0	9.0	120.0	2.0	Soybeans	sub-tropics	C3/II	0.000	3.0	0.30	4.0	0	5	15	30	35	35	30	5	0	
105	SB	TUR	5	1	5.0	9.0	120.0	2.0	Soybeans	sub-tropics	C3/II	3.718	3.0	0.30	4.0	0	5	15	30	35	35	30	5	0	
106	SB	ARE	3	1	5.0	9.0	120.0	2.0	Soybeans	sub-tropics	C3/II	0.000	3.0	0.30	4.0	0	5	15	30	35	35	30	5	0	
107	SB	XWS	4	1	5.0	9.0	120.0	2.0	Soybeans	sub-tropics	C3/II	1.789	2.0	0.23	3.0	0	5	15	30	35	35	30	5	0	
108	SB	EGY	4	1	5.0	9.0	120.0	2.0	Soybeans	sub-tropics	C3/II	3.243	3.0	0.30	4.0	0	5	15	30	35	35	30	5	0	
109	SB	MAR	4	1	2.5	6.5	120.0	2.0	Soybeans	sub-tropics	C3/II	1.000	1.0	0.15	2.0	0	5	15	30	35	35	30	5	0	
110	SB	TUN	4	1	3.5	7.5	120.0	3.0	Soybeans	sub-tropics	C3/II	0.000	2.0	0.23	3.0	0	5	15	30	35	35	30	5	0	
111	SB	XNF	4	1	3.5	7.5	120.0	2.0	Soybeans	sub-tropics	C3/II	0.000	2.0	0.23	3.0	0	5	15	30	35	35	30	5	0	
112	SB	BEN	2	1	6.5	10.0	105.0	2.0	Soybeans	tropics	C3/II	0.678	1.0	0.15	1.8	0	0	15	30	35	35	30	5	0	
113	SB	BFA	2	1	7.0	10.5	105.0	2.0	Soybeans	tropics	C3/II	1.665	2.0	0.23	2.7	0	0	15	30	35	35	30	5	0	
114	SB	CMR	1	1	6.0	9.0	90.0	1.0	Soybeans	tropics	C3/II	0.609	1.0	0.15	1.5	0	0	15	30	35	35	30	5	0	
115	SB	CIV	2	1	7.5	11.5	120.0	3.0	Soybeans	tropics	C3/II	1.016	2.0	0.23	3.0	0	0	15	30	35	35	30	5	0	
116	SB	GHA	2	1	5.5	10.0	135.0	2.0	Soybeans	tropics	C3/II	0.000	2.0	0.23	3.0	0	0	15	30	35	35	30	5	0	
117	SB	GIN	2	1	6.5	11.0	135.0	2.0	Soybeans	tropics	C3/II	0.000	1.0	0.15	1.8	0	0	15	30	35	35	30	5	0	
118	SB	NGA	2	1	6.0	9.5	105.0	2.0	Soybeans	tropics	C3/II	0.947	1.0	0.15	1.8	0	0	15	30	35	35	30	5	0	
119	SB	SEN	2	1	6.5	11.0	135.0	2.0	Soybeans	tropics	C3/II	0.000	1.0	0.15	2.0	0	0	15	30	35	35	30	5	0	
120	SB	TGO	2	1	5.5	10.0	135.0	3.0	Soybeans	tropics	C3/II	0.420	1.0	0.15	2.0	0	0	15	30	35	35	30	5	0	
121	SB	XWF	2	1	6.5	11.0	135.0	3.0	Soybeans	tropics	C3/II	0.885	1.0	0.15	2.0	0	0	15	30	35	35	30	5	0	
122	SB	XCF	1	1	11.5	3.5	150.0	3.0	Soybeans	tropics	C3/II	0.687	1.0	0.15	2.0	0	0	15	30	35	35	30	5	0	
123	SB	XAC	1	1	3.5	6.5	90.0	1.0	Soybeans	tropics	C3/II	0.483	1.0	0.15	1.5	0	0	15	30	35	35	30	5	0	
124	SB	ETH	2	1	3.0	6.0	90.0	1.0	Soybeans	tropics	C3/II	0.972	1.0	0.15	1.5	0	0	15	30	35	35	30	5	0	
125	SB	KEN	1	1	3.0	7.0	120.0	3.0	Soybeans	tropics	C3/II	0.816	1.0	0.15	2.0	0	0	15	30	35	35	30	5	0	
126	SB	MDG	3	2	12.0	4.0	150.0	3.0	Soybeans	tropics	C3/II	0.473	1.0	0.15	2.0	0	0	15	30	35	35	30	5	0	
127	SB	MWI	2	2	11.5	4.0	165.0	3.0	Soybeans	tropics	C3/II	0.844	1.0	0.15	2.0	0	0	15	30	35	35	30	5	0	
128	SB	MUS	3	2	12.0	4.0	150.0	2.0	Soybeans	tropics	C3/II	0.000	1.0	0.15	2.0	0	0	15	30	35	35	30	5	0	
129	SB	MOZ	3	2	12.0	4.0	150.0	2.0	Soybeans	tropics	C3/II	0.000	1.0	0.15	2.0	0	0	15	30	35	35	30	5	0	
130	SB	RWA	1	2	3.5	8.0	135.0	3.0	Soybeans	tropics	C3/II	0.753	1.0	0.15	2.0	0	0	15	30	35	35	30	5	0	
131	SB	TZA	2	2	12.0	4.0	150.0	3.0	Soybeans	tropics	C3/II	0.376	1.0	0.15	2.0	0	0	15	30	35	35	30	5	0	
132	SB	UGA	1	1	7.5	11.0	105.0	2.0	Soybeans	tropics	C3/II	1.202	2.0	0.23	2.7	0	0	15	30	35	35	30	5	0	
133	SB	ZMB	3	2	0.5	3.5	90.0	1.0	Soybeans	sub-tropics	C3/II	1.233	2.0	0.23	2.7	0	5	15	30	35	35	30	5	0	
134	SB	ZWE	3	2	11.5	4.0	165.0	3.0	Soybeans	sub-tropics	C3/II	1.574	2.0	0.23	3.0	0	5	15	30	35	35	30	5	0	
135	SB	XEC	2	2	10.0	1.0	120.0	2.0	Soybeans	sub-tropics	C3/II	0.757	1.0	0.15	2.0	0	5	15	30	35	35	30	5	0	
136	SB	BWA	3	2	11.5	4.0	165.0	2.0	Soybeans	sub-tropics	C3/II	0.000	1.0	0.15	2.0	0	5	15	30	35	35	30	5	0	
137	SB	NAM	3	2	11.5	4.0	165.0	3.0	Soybeans	sub-tropics	C3/II	0.000	2.0	0.23	3.0	0	5	15	30	35	35	30	5	0	
138	SB	ZAF	4	2	12.0	4.0	150.0	3.0	Soybeans	sub-tropics	C3/II	1.529	2.0	0.23	3.0	0	5	15	30	35	35	30	5	0	
139	SB	XSC	4	2	12.0	4.0	150.0	2.0	Soybeans	sub-tropics	C3/II	0.000	2.0	0.23	3.0	0	5	15	30	35	35	30	5	0	
140	SB	XTW	2	1	10.0	1.0	120.0	2.0	Soybeans	sub-tropics	C3/II	0.000	1.0	0.15	2.0	0	5	15	30	35	35	30	5	0	

Note: Original data source: Fischer et al. (2002). Planting and harvest months in Africa are based on FAO's cropping calendar.

Table A-1-5. Maximum active incoming shortwave radiation and gross dry matter production.

Variable	Unit	LAT	Latitude	N-S	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
RSE	cal cm ⁻² day ⁻¹	1	343	0	343	360	369	364	349	337	343	357	368	365	349	337
RSE	cal cm ⁻² day ⁻¹	2	299	10	299	332	359	375	377	374	375	377	369	345	311	291
RSE	cal cm ⁻² day ⁻¹	3	249	20	249	293	337	375	394	400	399	386	357	313	264	238
RSE	cal cm ⁻² day ⁻¹	4	191	30	191	245	303	363	400	417	411	384	333	270	210	179
RSE	cal cm ⁻² day ⁻¹	5	131	40	131	190	260	339	396	422	413	369	298	220	151	118
RSE	cal cm ⁻² day ⁻¹	1	343	0	343	357	368	365	349	337	343	360	369	364	349	337
RSE	cal cm ⁻² day ⁻¹	2	375	10	375	377	369	345	311	291	299	332	339	375	377	374
RSE	cal cm ⁻² day ⁻¹	3	399	20	399	386	357	313	264	238	249	293	337	375	394	400
RSE	cal cm ⁻² day ⁻¹	4	411	30	411	384	333	270	210	179	191	245	303	363	400	417
RSE	cal cm ⁻² day ⁻¹	5	413	40	413	369	298	220	151	118	131	190	260	339	396	422
YC	kg ha ⁻¹ day ⁻¹	1	424	0	424	424	429	426	417	410	413	422	429	427	418	410
YC	kg ha ⁻¹ day ⁻¹	2	376	10	376	401	422	437	440	440	440	439	431	411	385	370
YC	kg ha ⁻¹ day ⁻¹	3	334	20	334	371	407	439	460	468	468	465	451	425	387	348
YC	kg ha ⁻¹ day ⁻¹	4	281	30	281	333	385	437	471	489	483	456	412	356	299	269
YC	kg ha ⁻¹ day ⁻¹	5	219	40	219	283	353	427	480	506	497	455	390	314	241	204
YC	kg ha ⁻¹ day ⁻¹	1	413	0	413	422	429	427	418	410	413	424	429	426	417	410
YC	kg ha ⁻¹ day ⁻¹	2	440	10	440	439	431	411	385	370	376	401	422	437	440	440
YC	kg ha ⁻¹ day ⁻¹	3	465	20	465	451	425	387	348	325	334	371	407	439	460	468
YC	kg ha ⁻¹ day ⁻¹	4	483	30	483	456	412	356	299	269	281	333	385	437	471	489
YC	kg ha ⁻¹ day ⁻¹	5	497	40	497	455	390	314	241	204	219	283	353	427	480	506
YO	kg ha ⁻¹ day ⁻¹	1	219	0	219	226	230	228	221	216	218	225	230	228	222	216
YO	kg ha ⁻¹ day ⁻¹	2	197	10	197	212	225	234	236	235	236	235	230	218	203	193
YO	kg ha ⁻¹ day ⁻¹	3	170	20	170	193	215	235	246	250	249	242	226	203	178	164
YO	kg ha ⁻¹ day ⁻¹	4	137	30	137	168	200	232	251	261	258	243	216	182	148	130
YO	kg ha ⁻¹ day ⁻¹	5	99	40	99	137	178	223	253	268	263	239	200	155	112	91
YO	kg ha ⁻¹ day ⁻¹	1	218	0	218	225	230	228	222	216	219	226	230	228	221	216
YO	kg ha ⁻¹ day ⁻¹	2	236	10	236	235	230	218	203	193	197	212	225	234	236	235
YO	kg ha ⁻¹ day ⁻¹	3	249	20	249	242	226	203	178	164	170	193	215	235	246	250
YO	kg ha ⁻¹ day ⁻¹	4	258	30	258	243	216	182	148	130	137	168	200	232	251	261
YO	kg ha ⁻¹ day ⁻¹	5	263	40	263	239	200	155	112	91	99	137	178	223	253	268

Note: RSE: Maximum active incoming shortwave radiation, YC: Gross dry matter production on clear days, YO: Gross dry matter production on overcast days

LAT: level of latitude, Latitude: for example, from 5 to 15 degrees are categorized to 10 degree.

N-S: 1: North hemisphere, 2: South hemisphere

Source: Doorenbos and Kassam (FAO) (1979)

Table A-2-1. Factor share to production value of rice (RI) and wheat (WH) (continued).

CNO Country No.	CID Country code	Rice					Wheat						
		$\alpha_{A,RI}$ Land	$\alpha_{V,RI}$ Chemical	$\alpha_{L,RI}$ Labor	$\alpha_{K,RI}$ Capital	η_{RI} Sum.	Variable f.	$\alpha_{A,WH}$ Land	$\alpha_{V,WH}$ Chemical	$\alpha_{L,WH}$ Labor	$\alpha_{K,WH}$ Capital	η_{WH} Sum.	Variable f.
47	SLV	0.1902	0.1354	0.2983	0.1686	0.7925	0.3256	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
48	XCA	0.1230	0.1639	0.1803	0.1066	0.5738	0.2869	0.0716	0.0575	0.1068	0.0637	0.2996	0.1291
49	DOM	0.1148	0.2439	0.1456	0.1023	0.6066	0.3587	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
50	JAM	0.0000	0.3333	0.3333	0.3333	0.6667	0.0000	0.0000	0.0000	0.2500	0.0000	0.2500	0.0000
51	PRI	0.1934	0.0803	0.2453	0.1725	0.6915	0.2737	0.1551	0.0609	0.1973	0.1385	0.5518	0.2160
52	TTO	0.0323	0.0000	0.0323	0.0161	0.0806	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
53	XCB	0.2031	0.0687	0.2578	0.1814	0.7110	0.2718	0.1956	0.0348	0.2483	0.1747	0.6534	0.2304
54	AUT	0.0233	0.0465	0.1860	0.0698	0.3256	0.0698	0.0963	0.0335	0.5495	0.1841	0.8634	0.1298
55	BEL	0.0027	0.0134	0.0188	0.0080	0.0429	0.0161	0.0519	0.4016	0.2394	0.2619	0.7919	0.4535
56	CYP	0.0000	0.0000	0.3333	0.0000	0.3333	0.0000	0.8884	0.0714	0.4626	0.2619	0.8844	0.1599
57	CZE	0.0417	0.0000	0.0417	0.0000	0.0833	0.0417	0.1949	0.1205	0.1707	0.0668	0.5528	0.3154
58	DNK	0.0392	0.0392	0.0784	0.1373	0.2941	0.0784	0.0584	0.0990	0.1329	0.2108	0.5011	0.1573
59	EST	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1765	0.0513	0.2443	0.0754	0.5475	0.2278
60	FIN	0.0385	0.0385	0.1154	0.0385	0.2308	0.0769	0.0316	0.2541	0.1597	0.0609	0.5064	0.2858
61	FRA	0.0778	0.0544	0.4152	0.1462	0.6936	0.1322	0.0529	0.1599	0.2831	0.0997	0.5956	0.2128
62	DEU	0.0493	0.0493	0.1207	0.0542	0.2734	0.0985	0.0791	0.0474	0.1985	0.0897	0.4146	0.1265
63	GRC	0.0787	0.0487	0.4799	0.1500	0.7573	0.1275	0.0562	0.0482	0.3436	0.1074	0.1044	0.1044
64	HUN	0.2973	0.0270	0.2973	0.1081	0.7297	0.3243	0.1969	0.0689	0.1951	0.0675	0.5284	0.2658
65	IRL	0.0303	0.0909	0.0000	0.0606	0.1818	0.1212	0.0694	0.2020	0.1818	0.1320	0.4166	0.2714
66	ITA	0.1059	0.0094	0.3991	0.2022	0.7166	0.1153	0.0761	0.0364	0.2869	0.1452	0.5446	0.1125
67	LVA	0.0769	0.0769	0.1538	0.0000	0.3077	0.1538	0.1599	0.0896	0.2869	0.0683	0.6048	0.2495
68	LTU	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1320	0.1715	0.2632	0.0566	0.6233	0.3035
69	LUX	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1023	0.0455	0.4432	0.1932	0.7841	0.1477
70	MLT	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0909	0.0455	0.4545	0.1364	0.7273	0.1364
71	NLD	0.0329	0.0526	0.1053	0.0592	0.2500	0.0855	0.0526	0.1787	0.1794	0.1002	0.2313	0.2313
72	POL	0.1053	0.0526	0.1447	0.0395	0.3421	0.1579	0.1655	0.1201	0.2410	0.0567	0.5833	0.2855
73	PRT	0.0770	0.1398	0.3666	0.1469	0.7304	0.2168	0.0811	0.0360	0.3919	0.1577	0.6667	0.1171
74	SVK	0.0588	0.0588	0.0588	0.0000	0.1765	0.1176	0.1398	0.1008	0.0754	0.0481	0.3641	0.2406
75	SVN	0.1667	0.0000	0.1667	0.0000	0.3333	0.1667	0.2222	0.0719	0.3203	0.0768	0.6912	0.2941
76	ESP	0.0822	0.1106	0.4036	0.1571	0.7535	0.1928	0.0775	0.0394	0.3798	0.1479	0.6446	0.1169
77	SWE	0.0286	0.0286	0.1429	0.0571	0.2571	0.0571	0.0441	0.2379	0.2247	0.0841	0.5907	0.2819
78	GBR	0.0402	0.0302	0.1106	0.0503	0.2312	0.0704	0.0556	0.0219	0.1520	0.0715	0.3010	0.0775
79	CHE	0.1667	0.0455	0.1515	0.2273	0.5909	0.2121	0.1828	0.0475	0.1704	0.2572	0.6579	0.2303
80	NOR	0.2222	0.0222	0.2444	0.3111	0.8000	0.2444	0.1888	0.0680	0.2077	0.2657	0.7302	0.2568
81	XEF	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0707	0.1630	0.0543	0.0978	0.3859	0.2337
82	ALB	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.2528	0.0235	0.2156	0.0867	0.5787	0.2763
83	BGR	0.3255	0.0090	0.3883	0.1122	0.8350	0.3345	0.0308	0.0871	0.0368	0.0106	0.1654	0.1179
84	BLR	0.1128	0.0824	0.2260	0.0483	0.4695	0.1952	0.0731	0.0751	0.1469	0.0314	0.3265	0.1482
85	HRV	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1932	0.0248	0.2711	0.0663	0.5553	0.2180
86	ROU	0.3345	0.0102	0.4949	0.1160	0.9556	0.3447	0.2376	0.0236	0.3507	0.0815	0.6933	0.2611
87	RUS	0.2057	0.0323	0.4111	0.0881	0.7372	0.2933	0.2027	0.0254	0.4051	0.0869	0.7201	0.2281
88	UKR	0.1467	0.1467	0.3000	0.0667	0.6600	0.2933	0.1481	0.0524	0.2966	0.0635	0.5606	0.2005
89	XEE	0.1250	0.2500	0.3750	0.1250	0.8750	0.3750	0.1570	0.0675	0.3193	0.0675	0.6114	0.2246
90	XER	0.2791	0.0078	0.4031	0.1318	0.8217	0.2868	0.1475	0.0394	0.1809	0.0689	0.4692	0.1869
91	KAZ	0.1020	0.0605	0.2017	0.0439	0.4081	0.1625	0.0915	0.0510	0.1809	0.0392	0.3625	0.1424
92	KGZ	0.1538	0.0256	0.3333	0.0769	0.5897	0.1795	0.0723	0.0098	0.1534	0.0312	0.2667	0.0821
93	XSU	0.1224	0.0210	0.2413	0.0524	0.4371	0.1434	0.0566	0.0158	0.1119	0.0242	0.2085	0.0724

Table A-2-2. Factor share to production value of maize and other grains (G: MZ, XG) and soybeans and other oil crops (S: SB, XS).

CNO Country No.	CID Country code	Maize and other grains					Soybeans and other oil crops						
		$\alpha_{A,G}$ Land	$\alpha_{V,G}$ Chemical	$\alpha_{L,G}$ Labor	$\alpha_{K,G}$ Capital	η_G Sum.	Variable f.	$\alpha_{A,S}$ Land	$\alpha_{V,S}$ Chemical	$\alpha_{L,S}$ Labor	$\alpha_{K,S}$ Capital	η_S Sum.	Variable f.
1	AUS	0.0879	0.1195	0.0777	0.1173	0.4024	0.2075	0.1398	0.0379	0.1236	0.1864	0.4876	0.1777
2	NZL	0.0571	0.0799	0.0924	0.0982	0.3277	0.1371	0.0412	0.0982	0.0619	0.0722	0.2165	0.0825
3	XOC	0.1949	0.0863	0.0607	0.0447	0.3866	0.2812	0.3050	0.0166	0.0965	0.0695	0.4876	0.3216
4	CHN	0.1465	0.1169	0.2397	0.0606	0.5637	0.2634	0.2199	0.5637	0.3598	0.0910	0.7798	0.3290
5	HKG	0.1509	0.1226	0.1415	0.0283	0.4434	0.2736	0.2273	0.0909	0.2273	0.0455	0.5909	0.3182
6	JPN	0.1098	0.1580	0.2868	0.1892	0.7437	0.2678	0.1081	0.0893	0.2814	0.1861	0.6648	0.1973
7	KOR	0.2874	0.0678	0.1822	0.0514	0.5888	0.3551	0.3869	0.0430	0.2460	0.0682	0.7441	0.4299
8	MNG	0.0500	0.0000	0.1000	0.0000	0.1500	0.0500	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	TWN	0.1599	0.0755	0.1840	0.0337	0.4531	0.2353	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10	XEA	0.1020	0.0204	0.1020	0.0204	0.2449	0.1224	0.2373	0.0847	0.2373	0.0508	0.6102	0.3220
11	BRN	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12	KHM	0.4478	0.0152	0.3587	0.0620	0.8837	0.4630	0.4813	0.0086	0.3847	0.0660	0.9407	0.4900
13	IDN	0.4439	0.0298	0.3626	0.0609	0.8972	0.4737	0.3973	0.0435	0.3245	0.0545	0.8198	0.4408
14	LAO	0.4573	0.0030	0.3658	0.0626	0.8887	0.4602	0.5022	0.0022	0.4013	0.0695	0.9753	0.5045
15	MYS	0.0757	0.0286	0.0552	0.0102	0.1697	0.1043	0.3237	0.1183	0.2401	0.0444	0.7265	0.4420
16	PHL	0.3400	0.0530	0.3809	0.0332	0.8071	0.3930	0.3635	0.0407	0.4073	0.0355	0.8470	0.4042
17	SGP	0.2500	0.0417	0.2083	0.0417	0.5417	0.2917	0.3125	0.0625	0.2500	0.0625	0.6875	0.3750
18	THA	0.3020	0.0923	0.2460	0.0414	0.6817	0.3942	0.2642	0.0968	0.2153	0.0363	0.6126	0.3611
19	VNM	0.3916	0.0884	0.3133	0.0539	0.8472	0.4800	0.2284	0.0324	0.1833	0.0314	0.4755	0.2608
20	XSE	0.4570	0.0015	0.3654	0.0628	0.8866	0.4585	0.5008	0.0007	0.4007	0.0687	0.9709	0.5015
21	BGD	0.2500	0.2674	0.2130	0.1022	0.8326	0.5174	0.1481	0.1432	0.1266	0.0607	0.4786	0.2913
22	IND	0.2797	0.0684	0.2395	0.1144	0.7020	0.3481	0.3093	0.0557	0.2648	0.1265	0.7563	0.3650
23	NPL	0.2467	0.0008	0.4826	0.1191	0.8492	0.2475	0.2014	0.0000	0.3934	0.0972	0.6919	0.2014
24	PAK	0.1584	0.3486	0.1322	0.0649	0.7042	0.5071	0.2482	0.282	0.2072	0.1015	0.7851	0.4764
25	LKA	0.2270	0.2135	0.1892	0.0919	0.7216	0.4405	0.2935	0.1070	0.2463	0.1194	0.7662	0.4005
26	XSA	0.3717	0.0169	0.3169	0.1520	0.8576	0.3886	0.3661	0.0156	0.3121	0.1501	0.8439	0.3818
27	CAN	0.0578	0.1794	0.1370	0.1553	0.5294	0.2372	0.0764	0.1753	0.1811	0.2054	0.6383	0.2518
28	USA	0.1276	0.1542	0.1077	0.1549	0.4544	0.2818	0.1502	0.0978	0.0209	0.1824	0.4512	0.2480
29	MEX	0.2106	0.0521	0.3387	0.1880	0.7895	0.2627	0.2194	0.0597	0.3522	0.1955	0.8269	0.2791
30	XNA	0.0749	0.1573	0.0974	0.0824	0.4120	0.2322	0.0935	0.1589	0.1215	0.1028	0.4766	0.2523
31	ARG	0.1514	0.1097	0.1036	0.1352	0.4998	0.2611	0.1580	0.1213	0.1081	0.1410	0.5284	0.2793
32	BOL	0.1670	0.0247	0.2646	0.1491	0.6054	0.1917	0.1611	0.0540	0.2550	0.1438	0.6139	0.2151
33	BRA	0.0922	0.1310	0.1312	0.3457	0.7001	0.2232	0.1001	0.1695	0.1424	0.3752	0.7872	0.2696
34	CHL	0.1105	0.1784	0.1718	0.0986	0.5592	0.2888	0.0695	0.0863	0.1078	0.0615	0.3251	0.1558
35	COL	0.1520	0.1760	0.1044	0.1357	0.5681	0.3280	0.2355	0.0796	0.1617	0.2101	0.6868	0.3150
36	ECU	0.0958	0.1153	0.1024	0.0855	0.3990	0.2111	0.1098	0.0470	0.1176	0.0984	0.3728	0.1568
37	PRY	0.2182	0.0830	0.1706	0.1948	0.6665	0.3011	0.2096	0.0957	0.1638	0.1871	0.6562	0.3052
38	PER	0.2509	0.0464	0.4056	0.0358	0.7386	0.2972	0.0364	0.0364	0.4278	0.0377	0.7666	0.3011
39	URY	0.0494	0.2036	0.0622	0.0434	0.3586	0.2530	0.0866	0.1570	0.1097	0.0774	0.4306	0.2435
40	VEN	0.1525	0.1282	0.2444	0.1362	0.6613	0.2807	0.1634	0.0975	0.2623	0.1462	0.6694	0.2609
41	XSM	0.1647	0.1165	0.2423	0.1473	0.6707	0.2811	0.1916	0.1078	0.1826	0.1677	0.7485	0.2994
42	GRI	0.0860	0.1720	0.0968	0.0753	0.4301	0.2581	0.1623	0.2217	0.1826	0.1449	0.7116	0.3841
43	GTM	0.1738	0.1114	0.2597	0.1551	0.7001	0.2852	0.2019	0.0602	0.3019	0.1801	0.7442	0.2621
44	HND	0.1225	0.0819	0.1984	0.1092	0.5120	0.2044	0.1973	0.1736	0.3198	0.1764	0.8672	0.3710
45	NIC	0.1834	0.1108	0.1978	0.1636	0.6556	0.2942	0.1330	0.0861	0.1434	0.1188	0.4813	0.2191
46	PAN	0.1712	0.0058	0.2731	0.1529	0.6029	0.1769	0.1250	0.2171	0.2039	0.1118	0.6579	0.3421

Table A-2-2. Factor share to production value of maize and other grains (G: MZ, XG) and soybeans and other oil crops (S: SB, XS) (continued).

CNO Country No.	CID Country code	Maize and other grains					Soybeans and other oil crops						
		$\alpha_{A,G}$ Land	$\alpha_{V,G}$ Chemical	$\alpha_{L,G}$ Labor	$\alpha_{K,G}$ Capital	η_G Sum.	Variable f.	$\alpha_{A,S}$ Land	$\alpha_{V,S}$ Chemical	$\alpha_{L,S}$ Labor	$\alpha_{K,S}$ Capital	η_S Sum.	Variable f.
47	SLV	0.1737	0.1218	0.2732	0.1550	0.7237	0.2955	0.1139	0.0197	0.1786	0.1013	0.4135	0.1336
48	XCA	0.0873	0.1508	0.1349	0.0794	0.4524	0.2381	0.0714	0.0714	0.1429	0.0714	0.3571	0.1429
49	DOM	0.0365	0.1793	0.0486	0.0334	0.2979	0.2158	0.1765	0.1765	0.2353	0.1765	0.7647	0.3529
50	JAM	0.0866	0.0010	0.4053	0.1658	0.6586	0.0876	0.0360	0.0000	0.1655	0.0360	0.2662	0.0360
51	PRI	0.1549	0.0912	0.1971	0.1386	0.5818	0.2461	0.1795	0.0927	0.2282	0.1605	0.6609	0.2723
52	TTO	0.3333	0.0000	0.3333	0.3333	1.0000	0.2461	0.3333	0.0000	0.3333	0.3333	1.0000	0.3333
53	XCB	0.1928	0.0648	0.2447	0.1722	0.6745	0.2576	0.1768	0.0609	0.2243	0.1578	0.6198	0.2377
54	AUT	0.0619	0.1679	0.3530	0.1183	0.7011	0.2298	0.0648	0.1619	0.3684	0.1232	0.7183	0.2266
55	BEL	0.0485	0.4116	0.2238	0.0928	0.7767	0.4600	0.0648	0.2671	0.2497	0.1034	0.6743	0.3213
56	CYP	0.0830	0.1162	0.4274	0.2407	0.8672	0.1992	0.0991	0.0180	0.5315	0.2973	0.9459	0.1171
57	CZE	0.2260	0.1032	0.1979	0.0774	0.6044	0.3291	0.1566	0.2198	0.1371	0.0536	0.5671	0.3764
58	DNK	0.0664	0.0881	0.1514	0.2403	0.5463	0.1545	0.0633	0.1673	0.1446	0.2296	0.6049	0.2307
59	EST	0.1546	0.0779	0.2153	0.0664	0.5143	0.2325	0.1828	0.0534	0.2546	0.0788	0.5696	0.2363
60	FIN	0.0382	0.0592	0.1921	0.0729	0.3625	0.0974	0.0359	0.2503	0.1797	0.0680	0.5340	0.2863
61	FRA	0.0531	0.1816	0.2839	0.1000	0.6187	0.2347	0.0574	0.1711	0.3070	0.1082	0.6437	0.2285
62	DEU	0.0863	0.0501	0.2165	0.0978	0.4506	0.1363	0.0796	0.0949	0.1996	0.0901	0.4642	0.1745
63	GRC	0.0751	0.0951	0.4587	0.1433	0.7722	0.4010	0.0664	0.1015	0.4069	0.1270	0.6118	0.0780
64	HUN	0.1985	0.0744	0.1967	0.0680	0.5376	0.2729	0.1878	0.1049	0.1861	0.0644	0.5432	0.2927
65	IRL	0.0719	0.1783	0.1371	0.1371	0.4010	0.2501	0.1019	0.0243	0.0194	0.1942	0.3398	0.1262
66	ITA	0.0903	0.0560	0.3404	0.1724	0.6591	0.1463	0.0779	0.0306	0.2937	0.1487	0.5509	0.1085
67	LVA	0.1938	0.0846	0.3477	0.0831	0.7092	0.2785	0.1333	0.1410	0.2404	0.0568	0.5716	0.2743
68	LTU	0.1155	0.3917	0.2300	0.0495	0.7867	0.5072	0.1596	0.1902	0.3182	0.0684	0.3498	0.1095
69	LUX	0.0938	0.0813	0.4188	0.1813	0.7750	0.1750	0.0429	0.0667	0.1952	0.0857	0.3905	0.1095
70	MLT	0.0789	0.1316	0.3947	0.1316	0.7368	0.2105	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
71	NLD	0.0498	0.1346	0.1698	0.0949	0.4492	0.1844	0.0770	0.0562	0.2619	0.1464	0.6189	0.3062
72	POL	0.1238	0.1119	0.1803	0.0424	0.4584	0.2357	0.1738	0.1324	0.2531	0.0596	0.1822	0.1333
73	PRT	0.0763	0.1065	0.3656	0.1456	0.6940	0.1828	0.0381	0.0532	0.1822	0.0726	0.3460	0.0913
74	SVK	0.1728	0.1657	0.0930	0.0593	0.4908	0.3385	0.1317	0.2409	0.0708	0.0451	0.4885	0.3726
75	SVN	0.1902	0.1224	0.2746	0.0649	0.6521	0.3126	0.2940	0.0230	0.4237	0.1008	0.8415	0.3170
76	ESP	0.0793	0.1417	0.3887	0.1514	0.7611	0.2210	0.0732	0.0302	0.3589	0.1397	0.6021	0.1035
77	SWE	0.0569	0.1852	0.2905	0.1086	0.6412	0.2421	0.0677	0.1773	0.3462	0.1295	0.7206	0.2450
78	GBR	0.0621	0.0337	0.1698	0.0798	0.3454	0.0958	0.0651	0.0653	0.1780	0.0837	0.3921	0.1303
79	CHE	0.1367	0.0652	0.1276	0.1924	0.5220	0.2020	0.1441	0.0673	0.1344	0.2026	0.5485	0.2115
80	NOR	0.1706	0.0797	0.1876	0.2402	0.6781	0.2503	0.1384	0.0692	0.1509	0.1950	0.5535	0.2075
81	XEF	0.0748	0.0437	0.0561	0.1060	0.2807	0.1185	0.0223	0.0491	0.0179	0.0357	0.1250	0.0714
82	ALB	0.2445	0.0306	0.2096	0.0830	0.5677	0.2751	0.2547	0.1012	0.2183	0.0873	0.5706	0.2649
83	BGR	0.0732	0.0710	0.0873	0.0251	0.2565	0.1442	0.0249	0.0868	0.0296	0.0085	0.1498	0.1116
84	BLR	0.0810	0.1404	0.1623	0.0347	0.4184	0.2214	0.0858	0.1030	0.1720	0.0369	0.3977	0.1888
85	HRV	0.1724	0.0207	0.2419	0.0591	0.4940	0.1931	0.1863	0.0269	0.2614	0.0639	0.5385	0.2132
86	ROU	0.2450	0.1885	0.3618	0.0840	0.8793	0.4335	0.1315	0.5188	0.1941	0.0451	0.8894	0.6503
87	RUS	0.2156	0.0293	0.4310	0.0924	0.7683	0.2423	0.2002	0.0240	0.4001	0.0858	0.2242	0.2259
88	UKR	0.1609	0.0813	0.3224	0.0690	0.6336	0.2423	0.1626	0.0733	0.3258	0.0697	0.6314	0.2662
89	XEE	0.1719	0.1067	0.3495	0.0738	0.7018	0.2785	0.1712	0.0950	0.3473	0.0735	0.6871	0.2662
90	XER	0.1715	0.0410	0.2483	0.0801	0.5409	0.2125	0.1356	0.0358	0.1962	0.0633	0.4309	0.1714
91	KAZ	0.0971	0.0705	0.1922	0.0415	0.4013	0.1676	0.1020	0.0487	0.2013	0.0435	0.3954	0.1506
92	KGZ	0.1728	0.0194	0.3686	0.0741	0.6349	0.1922	0.1064	0.0071	0.2270	0.0496	0.3901	0.1135
93	XSU	0.1499	0.0154	0.2966	0.0644	0.5263	0.1654	0.0945	0.0092	0.1862	0.0404	0.3303	0.1037

Table A-2-3. Factor share to production value of beef and mutton (BF, SF).

CNO	Country No.	CID	Country code	α_{RI}		α_{WH}		α_{MZ}		α_{G}		α_{SB}		α_{XS}		α_{CS}		α_{CX}		α_{SK}		α_A	α_L	α_K	$\beta_{BF, SF}$	Sum	Feed cost share
				Rice	Feed	Wheat	Feed	Maize	Feed	Other grain	Feed	Soybeans	Feed	Other oil crop	Feed	Soybean cake	Feed	Other cake	Feed	Skim milk	Feed						
1	AUS			0.00035	0.00004	0.00006	0.00190	0.00050	0.03284	0.00001	0.00021	0.00087	0.10142	0.19919	0.13522	0.47259	0.03590										
2	NZL			0.00025	0.00752	0.00282	0.00574	0.00000	0.00017	0.00000	0.00025	0.00004	0.04980	0.17836	0.08536	0.33029	0.01674										
3	XOC			0.00052	0.01213	0.00839	0.00013	0.00000	0.00000	0.00000	0.00026	0.00000	0.16258	0.11432	0.03716	0.3548	0.02142										
4	CHN			0.02798	0.03644	0.01622	0.00669	0.00202	0.00603	0.00352	0.00148	0.00001	0.18465	0.31811	0.07641	0.67357	0.09439										
5	HKG			0.00060	0.00301	0.00000	0.00000	0.00000	0.00000	0.00000	0.00361	0.00000	0.13075	0.13616	0.02765	0.30177	0.00721										
6	JPN			0.01514	0.00059	0.00000	0.00116	0.00422	0.00027	0.00199	0.00222	0.00000	0.05683	0.15110	0.09789	0.20531	0.00721										
7	KOR			0.06364	0.00360	0.00163	0.00189	0.00044	0.00156	0.00056	0.00017	0.00000	0.12692	0.42074	0.03351	0.7021	0.00721										
8	MNG			0.00000	0.00433	0.00000	0.00060	0.00000	0.00000	0.00000	0.00000	0.00000	0.26796	0.46453	0.11083	0.84824	0.00493										
9	TWN			0.00296	0.00000	0.02417	0.00102	0.00002	0.01183	0.00248	0.00122	0.00000	0.08593	0.10370	0.01778	0.31111	0.10370										
10	XEA			0.00019	0.00431	0.00051	0.00007	0.00018	0.00001	0.00004	0.00022	0.00000	0.39131	0.39356	0.07754	0.86776	0.00534										
11	BRN			0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.08333	0.04167	0.00000	0.12500	0.00000										
12	KHM			0.00639	0.00101	0.00034	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.45727	0.6292	0.06292	0.90007	0.00774										
13	IDN			0.15368	0.00015	0.00866	0.00000	0.00033	0.00970	0.00027	0.00058	0.00000	0.32051	0.26222	0.04399	0.80010	0.17337										
14	LAO			0.01959	0.00000	0.00477	0.00000	0.00008	0.00041	0.00002	0.00015	0.00000	0.35951	0.29267	0.04938	0.72658	0.02502										
15	MYS			0.00000	0.00000	0.00086	0.00000	0.00000	0.00428	0.00014	0.00072	0.00000	0.30565	0.23288	0.04195	0.58647	0.00599										
16	PHL			0.00023	0.00062	0.00054	0.00000	0.00000	0.00023	0.00000	0.00000	0.00000	0.29766	0.39086	0.02902	0.71917	0.00163										
17	SGP			0.06008	0.00000	0.00022	0.00002	0.00000	0.00000	0.00000	0.00000	0.00000	0.41417	0.33994	0.05682	0.63380	0.06032										
18	THA			0.02947	0.00187	0.00839	0.00000	0.00200	0.01013	0.00000	0.00000	0.00000	0.28425	0.23130	0.03903	0.60644	0.05186										
19	VNM			0.01968	0.00125	0.00344	0.00092	0.00005	0.00052	0.00002	0.00002	0.00001	0.36369	0.26056	0.04993	0.73556	0.02589										
20	XSE			0.23792	0.00228	0.00050	0.00001	0.00000	0.00000	0.00000	0.12144	0.00000	0.11057	0.09479	0.04523	0.61273	0.36214										
21	BGD			0.00681	0.00272	0.00628	0.00053	0.00000	0.00000	0.01234	0.01886	0.00000	0.41018	0.14014	0.06676	0.05283	0.42292										
22	IND			0.00681	0.00272	0.00628	0.00053	0.00000	0.00000	0.00000	0.00000	0.00000	0.17820	0.34998	0.08606	0.84475	0.23051										
23	NPL			0.23017	0.00000	0.00029	0.00005	0.00000	0.00000	0.00000	0.02620	0.00000	0.20091	0.17311	0.08221	0.82603	0.36980										
24	PAK			0.07138	0.20786	0.00166	0.00021	0.00000	0.06249	0.00000	0.00000	0.00000	0.36600	0.31394	0.15008	0.85299	0.02297										
25	LKA			0.00000	0.02297	0.00000	0.00194	0.00000	0.00281	0.00000	0.00000	0.00000	0.36600	0.21896	0.10418	0.79320	0.21522										
26	XSA			0.20399	0.00374	0.00000	0.00274	0.00000	0.00281	0.00000	0.00000	0.00000	0.25483	0.10383	0.11530	0.36325	0.10117										
27	CAN			0.00032	0.00425	0.04065	0.03857	0.00006	0.00018	0.00383	0.01331	0.00004	0.04291	0.10383	0.11530	0.36325	0.10117										
28	USA			0.00101	0.00261	0.30550	0.01248	0.00067	0.00005	0.00582	0.00054	0.00003	0.06659	0.08130	0.08086	0.55745	0.32867										
29	MEX			0.00124	0.00564	0.09120	0.03300	0.00196	0.01684	0.00068	0.00043	0.00026	0.11824	0.19398	0.10556	0.56905	0.15100										
30	XNA			0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.04688	0.10156	0.05469	0.20313	0.00000										
31	ARG			0.00000	0.0086	0.02216	0.00865	0.00470	0.00013	0.00084	0.00012	0.00000	0.14386	0.14386	0.14485	0.48846	0.03740										
32	BOL			0.02547	0.03323	0.00107	0.00048	0.00059	0.00003	0.00225	0.00023	0.00000	0.17019	0.27919	0.15217	0.66491	0.06335										
33	BRA			0.00149	0.00042	0.04278	0.00188	0.00119	0.00011	0.00015	0.00001	0.00001	0.09130	0.13437	0.34237	0.61608	0.04803										
34	CHL			0.00187	0.02121	0.00805	0.00380	0.00000	0.00140	0.00537	0.00430	0.00437	0.15848	0.25238	0.14148	0.60271	0.04601										
35	COL			0.00000	0.00000	0.00889	0.00044	0.00000	0.00000	0.00371	0.00218	0.00000	0.17679	0.21873	0.15785	0.56859	0.01523										
36	ECU			0.01405	0.00158	0.00019	0.00001	0.00319	0.00552	0.00000	0.00000	0.00000	0.10586	0.14325	0.09458	0.36822	0.02454										
37	PRY			0.00194	0.00854	0.00204	0.00009	0.00019	0.00001	0.01062	0.00103	0.00000	0.16476	0.19658	0.14710	0.53289	0.02445										
38	PER			0.01697	0.07664	0.08105	0.01406	0.00017	0.01317	0.00021	0.00021	0.00000	0.16076	0.26900	0.02295	0.65820	0.20549										
39	URY			0.00000	0.00000	0.00367	0.00414	0.00011	0.00005	0.00000	0.00000	0.00178	0.19329	0.28932	0.17257	0.66793	0.01097										
40	VEN			0.00017	0.00000	0.00008	0.00002	0.00000	0.00000	0.00006	0.00011	0.00000	0.14127	0.23067	0.12614	0.49851	0.00043										
41	XSM			0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00286	0.15857	0.25286	0.14143	0.56429	0.00857										
42	CRI			0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.17250	0.22673	0.15395	0.55318	0.00000										
43	GTM			0.00000	0.00000	0.00014	0.00000	0.00377	0.01376	0.00008	0.00007	0.00000	0.16324	0.26570	0.14571	0.59430	0.01782										
44	HND			0.00000	0.00270	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.17838	0.29459	0.15946	0.63514	0.00270										
45	NIC			0.05426	0.00000	0.00508	0.00089	0.00000	0.00000	0.00000	0.00000	0.00000	0.18426	0.27490	0.16458	0.68396	0.06023										
46	PAN			0.00321	0.00021	0.00205	0.00009	0.00000	0.00085	0.00000	0.01327	0.00000	0.13252	0.21794	0.11839	0.48855	0.01970										

Table A-2-4. Factor share to production value of pork, poultry meat, other meat, and eggs (PK, PM, XM, EG).

CNO	Country No.	Country code	α_{RI}		α_{WH}		α_{MZ}		α_{XG}		α_{SB}		α_{XS}		α_{CS}		α_{CX}		α_{SK}		α_A	α_L	α_K	β_{PK-EG}	Feed cost share
			Rice	Wheat	Maize	Other grain	Soybeans	Other oil crop	Soybean cake	Other cake	Skim milk	Land	Labor	Capital	Sum										
1	AUS		0.00085	0.00785	0.00627	0.19026	0.00012	0.00796	0.00001	0.00011	0.00073	0.09086	0.17846	0.12114	0.60462	0.21342									
2	NZL		0.00013	0.03630	0.00343	0.00699	0.00000	0.00373	0.00000	0.00026	0.00000	0.04994	0.17904	0.08573	0.35457	0.03986									
3	XOC		0.00172	0.11015	0.01017	0.00016	0.00000	0.00000	0.00000	0.00000	0.00000	0.14286	0.09983	0.03270	0.39743	0.12205									
4	CHN		0.05139	0.06768	0.00694	0.00030	0.00220	0.00655	0.000319	0.00001	0.00001	0.13554	0.23350	0.05609	0.56652	0.13140									
5	HKG		0.00008	0.00045	0.00000	0.00000	0.00000	0.00000	0.00000	0.00045	0.00000	0.19042	0.19831	0.04010	0.42936	0.00053									
6	JPN		0.00843	0.00038	0.00000	0.00045	0.00243	0.00015	0.00094	0.00097	0.00108	0.03063	0.08142	0.05275	0.17698	0.01219									
7	KOR		0.04242	0.00037	0.00088	0.00102	0.00016	0.00007	0.00096	0.00035	0.00011	0.08481	0.05668	0.01497	0.20125	0.04479									
8	MNG		0.00000	0.06543	0.00000	0.00064	0.00000	0.00000	0.00000	0.00000	0.00000	0.23797	0.41244	0.09814	0.81398	0.06543									
9	TWN		0.00135	0.00009	0.01467	0.00062	0.00001	0.00352	0.04120	0.00081	0.00000	0.08960	0.10850	0.01886	0.27428	0.05731									
10	XEA		0.00182	0.05483	0.00046	0.00006	0.00439	0.00029	0.00034	0.00018	0.00000	0.29678	0.29860	0.08873	0.71595	0.06185									
11	BRN		0.00000	0.00000	0.00000	0.00000	0.00000	0.00369	0.00000	0.00000	0.00000	0.11439	0.09225	0.01476	0.22140	0.00000									
12	KHM		0.04237	0.00196	0.00024	0.00000	0.00032	0.00029	0.00008	0.00002	0.00000	0.23559	0.19322	0.03257	0.50822	0.04489									
13	IDN		0.00160	0.00050	0.00954	0.00000	0.00003	0.00095	0.00008	0.00017	0.00000	0.47239	0.19272	0.03233	0.47239	0.01176									
14	LAO		0.09142	0.00000	0.00430	0.00000	0.00047	0.00246	0.00011	0.00087	0.00000	0.13499	0.10998	0.01856	0.35983	0.09630									
15	MYS		0.00000	0.00000	0.00127	0.00000	0.00000	0.00043	0.00003	0.00016	0.00000	0.25284	0.19230	0.03471	0.48115	0.00130									
16	PHL		0.00091	0.00177	0.01272	0.00000	0.00000	0.00006	0.00000	0.00002	0.00000	0.25579	0.33588	0.02495	0.63202	0.01540									
17	SGP		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.10874	0.08744	0.01457	0.21076	0.00000									
18	THA		0.01477	0.00040	0.00052	0.00004	0.00000	0.00000	0.00407	0.00199	0.00000	0.17264	0.14167	0.02369	0.35777	0.01976									
19	VNM		0.01646	0.00583	0.02091	0.00001	0.01115	0.05659	0.00001	0.00001	0.00000	0.19183	0.15613	0.02634	0.42866	0.05436									
20	XSE		0.09349	0.00113	0.00303	0.00081	0.00023	0.00267	0.00003	0.00022	0.00005	0.16193	0.14217	0.01951	0.37533	0.09792									
21	BGD		0.00000	0.06962	0.11130	0.00127	0.00423	0.02738	0.00000	0.01559	0.00000	0.24904	0.13881	0.06625	0.5215	0.18516									
22	IND		0.00554	0.00222	0.00503	0.00000	0.00000	0.00000	0.01677	0.02563	0.00000	0.24904	0.14217	0.01888	0.59435	0.02955									
23	NPL		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.19399	0.38087	0.01936	0.66849	0.00000									
24	PAK		0.03209	0.09009	0.00375	0.00048	0.00000	0.07349	0.00000	0.03488	0.00000	0.22284	0.19202	0.09119	0.63198	0.12593									
25	LKA		0.00000	0.03428	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.31435	0.26945	0.12871	0.74679	0.03428									
26	XSA		0.00035	0.00460	0.00154	0.00218	0.00000	0.00194	0.00000	0.00000	0.00000	0.28177	0.24182	0.11526	0.64534	0.00649									
27	CAN		0.00025	0.00742	0.02415	0.02291	0.00004	0.00014	0.00661	0.02298	0.00011	0.04357	0.10543	0.11710	0.30458	0.03848									
28	USA		0.00123	0.00449	0.04405	0.00180	0.00049	0.00004	0.02103	0.00195	0.00024	0.05937	0.07248	0.07209	0.07130	0.01130									
29	MEX		0.00091	0.00499	0.07835	0.02835	0.00179	0.01538	0.00054	0.00034	0.00021	0.10505	0.17234	0.09379	0.27524	0.08658									
30	XNA		0.00000	0.00535	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.05348	0.11230	0.05882	0.22995	0.00535									
31	ARG		0.00297	0.00010	0.17627	0.06880	0.14153	0.00380	0.00479	0.00030	0.00004	0.06438	0.05706	0.05749	0.50459	0.32566									
32	BOL		0.03453	0.04637	0.00889	0.00040	0.00062	0.00003	0.00235	0.00024	0.00000	0.15499	0.25389	0.13829	0.63194	0.08476									
33	BRA		0.00130	0.00045	0.05353	0.00236	0.00103	0.00009	0.00015	0.00001	0.00002	0.08672	0.12763	0.32521	0.59601	0.05644									
34	CHL		0.00175	0.01819	0.00703	0.00332	0.00000	0.00182	0.00368	0.00295	0.00301	0.09930	0.15811	0.08866	0.37672	0.03065									
35	COL		0.00000	0.00000	0.00874	0.00043	0.00000	0.00000	0.00372	0.00218	0.00000	0.17683	0.21874	0.15788	0.56591	0.01246									
36	ECU		0.01615	0.00375	0.00008	0.00000	0.00308	0.00533	0.00000	0.00000	0.00000	0.07891	0.10679	0.07042	0.27917	0.02305									
37	PER		0.00291	0.01314	0.00403	0.00018	0.00029	0.00001	0.01189	0.00115	0.00000	0.14938	0.17837	0.13333	0.49334	0.03227									
38	URY		0.01911	0.09318	0.04610	0.00800	0.00008	0.00596	0.00022	0.00032	0.00001	0.14745	0.24673	0.02106	0.57392	0.15869									
39	URY		0.00000	0.00000	0.00330	0.00373	0.00000	0.00000	0.03263	0.01316	0.00203	0.07548	0.12647	0.07548	0.32621	0.03972									
40	VEN		0.00016	0.00000	0.00004	0.00001	0.00000	0.00000	0.00007	0.00014	0.00000	0.13430	0.21932	0.11991	0.47381	0.00027									
41	XSM		0.00000	0.00000	0.00268	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.10391	0.16551	0.09266	0.36476	0.00268									
42	CRI		0.00000	0.00030	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.13270	0.17424	0.11846	0.42570	0.00030									
43	GTM		0.00000	0.00008	0.00808	0.00023	0.00003	0.00012	0.00004	0.00004	0.00000	0.13297	0.21658	0.11873	0.47651	0.00823									
44	HND		0.01760	0.00000	0.01488	0.00114	0.00000	0.00000	0.00000	0.00000	0.00000	0.05726	0.09430	0.05122	0.23527	0.03248									
45	NIC		0.09876	0.00052	0.00571	0.00100	0.00000	0.00000	0.00000	0.00000	0.00000	0.16323	0.24317	0.14569	0.65707	0.10499									
46	PAN		0.01109	0.00055	0.00712	0.00031	0.00000	0.00033	0.00000	0.00111	0.00000	0.17519	0.28839	0.15645	0.63878	0.01876									

Table A-2-4. Factor share to production value of pork, poultry meat, other meat, and eggs (PK, PM, XM, EG) (continued).

CNO	Country No.	Country code	α_{RI}		α_{WH}		α_{MZ}		α_{YG}		α_{SB}		α_{XS}		α_{CS}		α_{CX}		α_{SK}		α_A	α_L	α_K	β_{PK-EG}	Feed cost share
			Rice	Wheat	Maize	Other grain	Soybeans	Other oil crop	Soybean cake	Other cake	Skim milk	Land	Labor	Capital	Sum										
47	SLV		0.00000	0.00748	0.03859	0.00700	0.00000	0.00000	0.00000	0.01038	0.00000	0.08097	0.13063	0.07229	0.32996	0.04607									
48	XCA		0.01290	0.00000	0.00000	0.00000	0.00319	0.00000	0.00000	0.00000	0.00000	0.05806	0.09032	0.05161	0.21616	0.01616									
49	DOM		0.00811	0.00000	0.00618	0.00031	0.00000	0.00002	0.00007	0.00006	0.18759	0.25297	0.16751	0.62237	0.01430										
50	JAM		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00543	0.00000	0.02531	0.12597	0.04854	0.20005	0.00023										
51	PRI		0.00000	0.05612	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.08454	0.12740	0.08443	0.36249	0.05612										
52	TTO		0.00000	0.00000	0.00000	0.00000	0.00055	0.00000	0.00000	0.00000	0.03575	0.05281	0.03190	0.12046	0.00000										
53	XCB		0.03125	0.06317	0.03232	0.00624	0.00465	0.00254	0.00007	0.00005	0.12201	0.16448	0.10893	0.52469	0.12927										
54	AUT		0.00024	0.01293	0.04728	0.03376	0.00016	0.00180	0.00180	0.00504	0.07697	0.45274	0.14689	0.73734	0.06075										
55	BEL		0.00024	0.04216	0.02869	0.01566	0.00046	0.000875	0.03180	0.00875	0.11445	0.24354	0.03776	0.24354	0.07155										
56	CYP		0.00080	0.01574	0.00000	0.06642	0.00027	0.00053	0.00000	0.08269	0.24086	0.42678	0.24086	0.76687	0.01654										
57	CZE		0.00040	0.06476	0.02629	0.06360	0.00002	0.00157	0.00076	0.01400	0.10452	0.11250	0.03577	0.34502	0.09223										
58	DNK		0.00031	0.07073	0.00079	0.05606	0.00018	0.00180	0.00798	0.02001	0.04141	0.11608	0.14970	0.38081	0.07363										
59	EST		0.00000	0.02523	0.00000	0.02988	0.00000	0.00000	0.00332	0.01936	0.13679	0.24900	0.05843	0.46946	0.02523										
60	FIN		0.00027	0.01334	0.00000	0.09782	0.00000	0.00015	0.00377	0.02393	0.04802	0.27141	0.09169	0.42487	0.01375										
61	FRA		0.00063	0.05163	0.04131	0.03649	0.00001	0.00065	0.00498	0.01970	0.04624	0.25862	0.08710	0.48620	0.09423										
62	DEU		0.00019	0.06256	0.01361	0.04383	0.00000	0.00039	0.00064	0.00106	0.05188	0.18055	0.05880	0.36823	0.07701										
63	GRC		0.00201	0.00560	0.12668	0.03064	0.00017	0.00332	0.00307	0.00090	0.07280	0.44842	0.13903	0.79786	0.13761										
64	HUN		0.00026	0.03681	0.09437	0.02243	0.00174	0.00195	0.01770	0.01346	0.11420	0.15031	0.03914	0.43733	0.13368										
65	IRL		0.00025	0.03297	0.00000	0.06632	0.00000	0.00012	0.00184	0.02425	0.05345	0.32634	0.10204	0.51533	0.03350										
66	ITA		0.00110	0.01680	0.10233	0.01864	0.00020	0.00457	0.01112	0.04973	0.15187	0.28232	0.09494	0.55182	0.12484										
67	LVA		0.00000	0.01954	0.00000	0.02309	0.00266	0.00058	0.00475	0.01122	0.18786	0.31083	0.06483	0.54765	0.02011										
68	LUX		0.00024	0.00439	0.00100	0.01974	0.00000	0.00049	0.00000	0.00342	0.22304	0.46388	0.09566	0.78822	0.00564										
69	LTU		0.00000	0.00249	0.00023	0.00725	0.00000	0.00000	0.00000	0.00000	0.00748	0.03491	0.01247	0.05759	0.00272										
70	MLT		0.00000	0.00085	0.00000	0.02551	0.00000	0.00000	0.00085	0.00000	0.03571	0.21344	0.06803	0.31803	0.00085										
71	NLD		0.00019	0.07038	0.04492	0.05338	0.00109	0.00058	0.00061	0.02218	0.18742	0.46851	0.11659	0.40839	0.06256										
72	POL		0.00038	0.04292	0.01920	0.10875	0.00000	0.00056	0.00556	0.01567	0.17369	0.25724	0.05955	0.53303	0.06256										
73	PRT		0.00302	0.02511	0.08164	0.01282	0.00000	0.00012	0.00680	0.03729	0.04009	0.23374	0.07657	0.47322	0.12281										
74	SVK		0.00016	0.05125	0.07153	0.03403	0.00040	0.00345	0.00159	0.00693	0.12420	0.12098	0.04258	0.41269	0.12494										
75	SVN		0.00000	0.01017	0.04045	0.01424	0.00000	0.00000	0.00593	0.02535	0.14201	0.21153	0.04875	0.45291	0.05062										
76	ESP		0.00149	0.05911	0.03663	0.08383	0.00000	0.00015	0.02470	0.00607	0.04828	0.27765	0.09218	0.54003	0.12192										
77	SWE		0.00025	0.02908	0.00000	0.04513	0.00008	0.00038	0.00449	0.01844	0.05555	0.31244	0.10605	0.50374	0.02971										
78	GBR		0.00047	0.16458	0.00000	0.05779	0.00000	0.00075	0.00153	0.01187	0.07349	0.30946	0.09448	0.64323	0.16579										
79	CHE		0.00027	0.00406	0.00194	0.00345	0.00000	0.00006	0.00014	0.00002	0.10403	0.11600	0.14640	0.37277	0.00633										
80	NOR		0.00021	0.00057	0.00000	0.01191	0.00000	0.00435	0.00007	0.00000	0.12660	0.15056	0.17823	0.45624	0.00085										
81	XEF		0.00000	0.01472	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.09421	0.11089	0.13248	0.35231	0.01472										
82	ALB		0.00048	0.09190	0.03313	0.00354	0.00000	0.00018	0.00077	0.00000	0.08619	0.11952	0.02952	0.36093	0.12569										
83	BGR		0.00352	0.02290	0.02950	0.01227	0.00000	0.00020	0.01062	0.00064	0.21163	0.28410	0.07247	0.62432	0.05613										
84	BLR		0.00995	0.01570	0.01773	0.09386	0.00000	0.00357	0.00070	0.00000	0.05743	0.11882	0.02463	0.24426	0.04337										
85	HRV		0.00000	0.02306	0.11930	0.02257	0.00000	0.00000	0.00000	0.00000	0.11214	0.16325	0.03848	0.45624	0.14236										
86	ROU		0.00055	0.01636	0.10913	0.02150	0.00005	0.00023	0.00029	0.00392	0.21227	0.31805	0.07278	0.72947	0.12637										
87	RUS		0.00051	0.00517	0.01088	0.03772	0.00180	0.00153	0.00033	0.00095	0.07301	0.15124	0.03129	0.27403	0.01849										
88	UKR		0.00024	0.04498	0.13640	0.07219	0.00070	0.00049	0.00171	0.00053	0.07425	0.15359	0.03183	0.44215	0.18248										
89	XEE		0.00048	0.04952	0.19725	0.03132	0.00117	0.00073	0.00034	0.00109	0.08048	0.16952	0.03476	0.53353	0.24877										
90	XER		0.00032	0.02174	0.11183	0.01253	0.00056	0.00007	0.00064	0.00163	0.11278	0.17579	0.05269	0.47641	0.13515										
91	KAZ		0.00156	0.00097	0.00008	0.00040	0.00000	0.00001	0.00009	0.00000	0.12135	0.24018	0.05202	0.41630	0.00274										
92	KGZ		0.00024	0.06030	0.00049	0.00023	0.00000	0.00072	0.00004	0.00024	0.18789	0.39990	0.08056	0.72939	0.06103										
93	XSU		0.00039	0.05239	0.00034	0.00027	0.00000	0.00074	0.00000	0.00004	0.17207	0.34036	0.07373	0.63928	0.05312										

Table A-2-4. Factor share to production value of pork, poultry meat, other meat, and eggs (PK, PM, XM, EG) (continued).

Table with 15 main columns and multiple sub-columns for various inputs: Country No., Country code, Rice (Feed), Wheat (Feed), Maize (Feed), Other grain (Feed), Soybeans (Feed), Other oil crop (Feed), Soybean cake (Feed), Other cake (Feed), Skim milk (Feed), Land, Labor, Capital, Sum, and Feed cost share. The table lists 140 countries/regions from ARM to XTW.

Table A-2-5. Factor share to production value of milk (MK).

CNO	Country No.	Country code	α_{RI} Rice		α_{WH} Wheat		α_{MZ} Maize		α_{XG} Other grain		α_{SB} Soybeans		α_{XS} Other oil crop		α_{CS} Soybean cake		α_{CX} Other cake		α_{SK} Skim milk		α_A Land	α_L Labor	α_K Capital	β_{MK} Sum	Feed cost share
			Feed	Feed	Feed	Feed	Feed	Feed	Feed	Feed	Feed	Feed	Feed	Feed	Feed	Feed	Feed	Feed	Feed	Feed					
1	AUS		0.00053	0.00007	0.00199	0.00046	0.03024	0.00001	0.00015	0.00093	0.09494	0.18647	0.12658	0.44240	0.03348										
2	NZL		0.00035	0.00067	0.00136	0.00000	0.00014	0.00000	0.00006	0.00013	0.06803	0.24369	0.11664	0.43136	0.00300										
3	XOC		0.00131	0.01063	0.00044	0.00000	0.00000	0.00000	0.00015	0.00015	0.21876	0.15395	0.04996	0.43719	0.01452										
4	CHN		0.02558	0.03301	0.00231	0.00201	0.00599	0.00296	0.00124	0.00011	0.16649	0.28682	0.06889	0.11783	0.04003										
5	HKG		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00990	0.00990	0.00000	0.01980	0.00000										
6	JPN		0.00579	0.00028	0.00000	0.00273	0.00017	0.00135	0.00139	0.00101	0.07675	0.20407	0.13219	0.42316	0.01015										
7	KOR		0.09978	0.00019	0.00040	0.00047	0.00017	0.00005	0.00002	0.00354	0.18789	0.12559	0.03313	0.44741	0.10080										
8	MNG		0.00000	0.02571	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.20937	0.36272	0.08632	0.68411	0.02571										
9	TWN		0.00189	0.00027	0.00090	0.00021	0.03487	0.00000	0.00107	0.00000	0.07541	0.09135	0.01595	0.26121	0.07850										
10	XEA		0.00058	0.02349	0.00051	0.00007	0.00009	0.00019	0.00010	0.00000	0.29371	0.29545	0.05828	0.67356	0.02613										
11	BRN		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000										
12	KHM		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000										
13	IDN		0.12783	0.00000	0.00000	0.00069	0.02022	0.00044	0.00093	0.00000	0.26936	0.22036	0.03701	0.66905	0.14232										
14	LAO		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000										
15	MYS		0.00000	0.00000	0.00000	0.00000	0.00544	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000										
16	PHL		0.00000	0.40397	0.00003	0.00000	0.00400	0.00000	0.00000	0.00000	0.04400	0.06000	0.01633	0.21779	0.00000										
17	SGP		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.30542	0.24631	0.04433	0.59606	0.00000										
18	THA		0.05261	0.00000	0.00046	0.00000	0.00000	0.00000	0.00000	0.00000	0.35865	0.29449	0.04916	0.75537	0.05306										
19	VNM		0.00000	0.00000	0.00003	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.07140	0.00000										
20	XSE		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000										
21	BGD		0.23725	0.00175	0.00023	0.00000	0.00000	0.00000	0.12151	0.00000	0.11042	0.09490	0.04523	0.24122	0.00771										
22	IND		0.00000	0.00043	0.00025	0.00000	0.00001	0.00003	0.01074	0.00000	0.34945	0.30011	0.14296	0.80023	0.00771										
23	NPL		0.03086	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.17110	0.08260	0.02600	0.62068	0.03107										
24	PAK		0.07063	0.20505	0.00089	0.00011	0.00000	0.00000	0.02123	0.00000	0.22583	0.19455	0.09239	0.78933	0.27657										
25	LKA		0.00000	0.01591	0.00025	0.00001	0.00000	0.00000	0.00000	0.00000	0.33438	0.28638	0.13667	0.77359	0.01616										
26	XSA		0.02903	0.00288	0.00107	0.00051	0.00000	0.00000	0.00000	0.00000	0.25873	0.22221	0.10587	0.61979	0.03297										
27	CAN		0.00047	0.00405	0.02774	0.00005	0.00016	0.00405	0.01407	0.00011	0.05732	0.13871	0.15407	0.38795	0.03786										
28	USA		0.00125	0.00245	0.37521	0.00045	0.00003	0.01095	0.00102	0.00006	0.07030	0.07068	0.07030	0.58918	0.39030										
29	MEX		0.00157	0.00536	0.09213	0.00197	0.01693	0.00054	0.00034	0.00026	0.10611	0.17408	0.09473	0.47649	0.10157										
30	XNA		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.06061	0.13131	0.06566	0.26263	0.00505										
31	ARG		0.00149	0.00168	0.09381	0.07994	0.00215	0.00068	0.00004	0.00010	0.13067	0.11587	0.11667	0.54081	0.17760										
32	BOL		0.02087	0.03043	0.00239	0.00250	0.00011	0.00236	0.00025	0.00000	0.14609	0.24000	0.13043	0.57508	0.05856										
33	BRA		0.00233	0.00046	0.04795	0.00211	0.00022	0.00012	0.00001	0.00014	0.08905	0.13107	0.33395	0.60715	0.05307										
34	CHL		0.00164	0.01727	0.00698	0.00330	0.00175	0.00445	0.00357	0.00366	0.13118	0.20901	0.11720	0.48773	0.03035										
35	COL		0.00000	0.00000	0.00893	0.00044	0.00000	0.00371	0.00218	0.00000	0.17683	0.21877	0.15788	0.56613	0.01264										
36	ECU		0.01197	0.00125	0.00026	0.00001	0.00388	0.00000	0.00000	0.00000	0.08840	0.11958	0.07893	0.30263	0.01572										
37	PRY		0.00183	0.00835	0.00287	0.00013	0.00025	0.00001	0.00112	0.00000	0.17291	0.20645	0.15438	0.55858	0.02484										
38	PER		0.01580	0.08047	0.07793	0.00017	0.01345	0.00021	0.00331	0.00000	0.14484	0.24239	0.02067	0.58249	0.17458										
39	URY		0.00000	0.00000	0.00445	0.00381	0.00006	0.00000	0.00000	0.00185	0.19575	0.29295	0.17488	0.67183	0.00825										
40	VEN		0.00010	0.00000	0.00008	0.00000	0.00000	0.00005	0.00009	0.00000	0.08190	0.13373	0.07312	0.28897	0.00023										
41	XSM		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.13147	0.20983	0.11687	0.45817	0.00000										
42	CRI		0.00000	0.00038	0.00019	0.00000	0.00669	0.00000	0.00000	0.00000	0.12257	0.16091	0.10935	0.39339	0.00057										
43	GTM		0.00000	0.00000	0.00037	0.00001	0.01461	0.00000	0.00000	0.00000	0.17243	0.28105	0.15382	0.61166	0.00437										
44	HND		0.00065	0.00087	0.00020	0.00001	0.00043	0.00000	0.00000	0.00000	0.17660	0.29121	0.15768	0.62722	0.00173										
45	NIC		0.04968	0.00037	0.00668	0.00017	0.00000	0.00000	0.00000	0.00000	0.17221	0.25663	0.15390	0.63948	0.05673										
46	PAN		0.01191	0.00074	0.00034	0.00009	0.01517	0.00000	0.00037	0.00000	0.18906	0.31076	0.16859	0.68899	0.02058										

Table A-2-6. Factor share to production value of oils (*O*: *OS*, *OX*) and dairy products (*D*: *SK*, *BT*, *CH*).

CNO Country No.	CID Country code	Vegetable oil			Dairy products		
		$\alpha_{SB,XS,O}$ Oil crop	$\alpha_{L,O}$ Labor	$\alpha_{K,O}$ Capital	$\alpha_{MK,D}$ Raw milk	$\alpha_{L,D}$ Labor	$\alpha_{K,D}$ Capital
1	AUS	0.0030	0.0559	0.0975	0.2258	0.1010	0.1036
2	NZL	0.0276	0.0239	0.0092	0.6225	0.0445	0.0567
3	XOC	0.0324	0.0251	0.0172	0.5945	0.0405	0.0586
4	CHN	0.3804	0.0456	0.0626	0.3605	0.0364	0.0717
5	HKG	0.0192	0.0000	0.0000	0.0023	0.1495	0.2288
6	JPN	0.4696	0.0526	0.0449	0.2108	0.0879	0.1411
7	KOR	0.4060	0.0126	0.0381	0.2435	0.0518	0.0935
8	MNG	0.0000	0.0000	0.0000	0.5528	0.0407	0.0976
9	TWN	0.4799	0.0255	0.0556	0.3505	0.1018	0.0638
10	XEA	0.3324	0.0587	0.0503	0.2940	0.0780	0.1338
11	BRN	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12	KHM	0.2948	0.0635	0.2619	0.0000	0.0599	0.0757
13	IDN	0.2900	0.1895	0.1668	0.0315	0.1521	0.1214
14	LAO	0.3636	0.0545	0.0636	0.0000	0.1290	0.1935
15	MYS	0.3278	0.0155	0.0714	0.0245	0.0191	0.1212
16	PHL	0.2228	0.0266	0.2366	0.0034	0.0658	0.2344
17	SGP	0.0038	0.0483	0.0698	0.0013	0.0602	0.1168
18	THA	0.5957	0.0304	0.0912	0.0890	0.0652	0.2313
19	VNM	0.4399	0.1532	0.1859	0.0012	0.1099	0.1129
20	XSE	0.3255	0.0517	0.0632	0.0000	0.1209	0.1868
21	BGD	0.4093	0.0159	0.0789	0.0014	0.0979	0.0564
22	IND	0.4510	0.0356	0.1133	0.2092	0.1134	0.0410
23	NPL	0.4205	0.0138	0.0294	0.5179	0.0409	0.1764
24	PAK	0.0815	0.0272	0.0501	0.0004	0.0283	0.5310
25	LKA	0.1342	0.0864	0.4208	0.2588	0.0462	0.3510
26	XSA	0.1993	0.0204	0.0463	0.5536	0.0335	0.1589
27	CAN	0.3081	0.0421	0.1452	0.3010	0.0732	0.1147
28	USA	0.4086	0.0533	0.0368	0.3161	0.1222	0.0976
29	MEX	0.8050	0.0174	0.0585	0.1995	0.0663	0.2914
30	XNA	0.2896	0.0452	0.1312	0.2770	0.0805	0.1031
31	ARG	0.6218	0.0180	0.0335	0.3809	0.0577	0.0363
32	BOL	0.5851	0.0084	0.0299	0.1871	0.1218	0.2356
33	BRA	0.3624	0.0853	0.0856	0.3537	0.1119	0.0910
34	CHL	0.0228	0.0681	0.1555	0.2024	0.0740	0.2288
35	COL	0.2197	0.0662	0.1287	0.3645	0.0901	0.1504
36	ECU	0.0309	0.0425	0.0939	0.3055	0.0859	0.1941
37	PRY	0.2871	0.0138	0.0624	0.1759	0.0531	0.0682
38	PER	0.1172	0.1088	0.1559	0.3240	0.0916	0.1390
39	URY	0.2963	0.0776	0.1142	0.3745	0.1680	0.1382
40	VEN	0.1207	0.0796	0.1494	0.3078	0.1456	0.1750
41	XSM	0.0329	0.1753	0.2164	0.3039	0.0888	0.0927
42	CRI	0.0277	0.0718	0.1204	0.3850	0.0839	0.0752
43	GTM	0.1390	0.1525	0.2173	0.1832	0.1466	0.1972
44	HND	0.3333	0.0511	0.1441	0.3524	0.1064	0.0844
45	NIC	0.3606	0.0334	0.0484	0.5001	0.0716	0.1568
46	PAN	0.0951	0.0046	0.0325	0.0231	0.0653	0.1670
47	SLV	0.3881	0.0315	0.0839	0.3592	0.1660	0.1241
48	XCA	0.0258	0.0387	0.0839	0.2695	0.0922	0.1702
49	DOM	0.0219	0.1276	0.3508	0.3023	0.0708	0.3407
50	JAM	0.0876	0.0365	0.0365	0.0395	0.0650	0.1091
51	PRI	0.2501	0.1738	0.0153	0.0470	0.0854	0.0722
52	TTO	0.0027	0.2632	0.3278	0.1515	0.0553	0.0460
53	XCB	0.1346	0.1077	0.1599	0.3194	0.0790	0.1393
54	AUT	0.6249	0.0116	0.0270	0.1921	0.0468	0.0711
55	BEL	0.4205	0.1603	0.0659	0.1072	0.0653	0.1001
56	CYP	0.0084	0.0756	0.1429	0.1924	0.0351	0.0473
57	CZE	0.4595	0.0465	0.2624	0.1500	0.0665	0.1213
58	DNK	0.2926	0.0468	0.0502	0.1985	0.0888	0.0695
59	EST	0.0973	0.5079	0.0532	0.0961	0.0925	0.0829
60	FIN	0.4280	0.0406	0.0323	0.2101	0.0504	0.0483
61	FRA	0.6019	0.0104	0.0230	0.1801	0.0344	0.0535
62	DEU	0.6271	0.0227	0.0345	0.2314	0.0564	0.0688
63	GRC	0.1699	0.0948	0.1550	0.1768	0.0544	0.0814
64	HUN	0.4289	0.2558	0.0077	0.1090	0.0744	0.0820
65	IRL	0.0702	0.0505	0.1020	0.2439	0.0310	0.0442
66	ITA	0.1891	0.0848	0.1820	0.1383	0.0742	0.0733
67	LVA	0.0321	0.1009	0.1491	0.0704	0.0553	0.4528
68	LTU	0.0099	0.0764	0.1141	0.1213	0.0753	0.0926
69	LUX	0.2706	0.0054	0.3566	0.0979	0.0108	0.2123
70	MLT	0.0000	0.0741	0.0741	0.2605	0.0732	0.0852
71	NLD	0.5397	0.0671	0.1266	0.2201	0.0431	0.0731
72	POL	0.2701	0.3959	0.0269	0.0804	0.1297	0.1588

Table A-2-6. Factor share to production value of oils (*O*: *OS*, *OX*) and dairy products (*D*: *SK*, *BT*, *CH*) (continued).

CNO Country No.	CID Country code	Vegetable oil			Dairy products		
		$\alpha_{SB,XS,O}$ Oil crop	$\alpha_{L,O}$ Labor	$\alpha_{K,O}$ Capital	$\alpha_{MK,D}$ Raw milk	$\alpha_{L,D}$ Labor	$\alpha_{K,D}$ Capital
73	PRT	0.5901	0.0414	0.0628	0.1537	0.0589	0.0773
74	SVK	0.4414	0.2459	0.0240	0.0726	0.0865	0.0722
75	SVN	0.0414	0.3457	0.0536	0.1170	0.0407	0.1496
76	ESP	0.4831	0.0712	0.0927	0.1424	0.0769	0.0867
77	SWE	0.2575	0.0651	0.0845	0.1556	0.0581	0.0745
78	GBR	0.6076	0.0238	0.0284	0.1848	0.0985	0.0875
79	CHE	0.0893	0.0515	0.0333	0.1561	0.0750	0.0884
80	NOR	0.4149	0.0184	0.0114	0.1948	0.0912	0.0951
81	XEF	0.2072	0.0402	0.2294	0.1811	0.0502	0.0915
82	ALB	0.4065	0.0407	0.1057	0.3915	0.0354	0.3113
83	BGR	0.1306	0.4512	0.0975	0.1227	0.0310	0.0336
84	BLR	0.9847	0.0000	0.0000	0.1062	0.0772	0.1002
85	HRV	0.2159	0.0770	0.0542	0.1986	0.0884	0.0405
86	ROU	0.2103	0.0784	0.3452	0.0319	0.0341	0.0548
87	RUS	0.1906	0.0776	0.1434	0.0114	0.1053	0.1688
88	UKR	0.2466	0.0723	0.0480	0.0706	0.0925	0.0600
89	XEE	0.2416	0.0680	0.0439	0.0634	0.0855	0.0538
90	XER	0.2263	0.0949	0.1031	0.1851	0.0535	0.1306
91	KAZ	0.0716	0.1244	0.1152	0.0586	0.0868	0.1238
92	KGZ	0.4783	0.0435	0.0435	0.3977	0.0285	0.0316
93	XSU	0.2727	0.0618	0.0699	0.2785	0.0429	0.0645
94	ARM	0.0000	0.0654	0.0231	0.1117	0.1979	0.1185
95	AZE	0.7512	0.0143	0.0238	0.4829	0.0271	0.0703
96	GEO	0.1364	0.0909	0.0455	0.2783	0.0907	0.0497
97	BHR	0.0270	0.0338	0.0338	0.0506	0.1320	0.1674
98	IRN	0.1615	0.0280	0.0882	0.7647	0.0093	0.0782
99	ISR	0.0283	0.1583	0.0569	0.1816	0.2454	0.0335
100	KWT	0.0840	0.0918	0.1989	0.0044	0.0655	0.2340
101	JOR	0.1951	0.0000	0.0000	0.4538	0.0846	0.1250
102	OMN	0.0120	0.0605	0.0796	0.0787	0.0729	0.1163
103	QAT	0.0028	0.0289	0.0289	0.0864	0.2137	0.2565
104	SAU	0.3630	0.1378	0.0497	0.9172	0.0201	0.0281
105	TUR	0.1177	0.0450	0.1893	0.1602	0.1906	0.2723
106	ARE	0.3991	0.0934	0.1225	0.4073	0.0644	0.0958
107	XWS	0.4603	0.0243	0.0944	0.4026	0.0503	0.0724
108	EGY	0.9928	0.0024	0.0009	0.0057	0.3372	0.1865
109	MAR	0.1205	0.0578	0.0562	0.2501	0.2818	0.1949
110	TUN	0.2390	0.0336	0.0757	0.3146	0.0104	0.0371
111	XNF	0.1183	0.0414	0.0888	0.2315	0.0110	0.0291
112	BEN	0.5026	0.0410	0.0872	0.1075	0.1237	0.2366
113	BFA	0.3007	0.0476	0.1275	0.0401	0.0086	0.4585
114	CMR	0.0344	0.0989	0.1608	0.0018	0.0731	0.1645
115	CIV	0.1653	0.0462	0.0184	0.1868	0.0549	0.1099
116	GHA	0.0009	0.3243	0.1699	0.0083	0.2531	0.1874
117	GIN	0.0000	0.4667	0.1333	0.0006	0.0039	0.4497
118	NGA	0.9261	0.0164	0.0121	0.0000	0.4167	0.2805
119	SEN	0.2704	0.0190	0.0108	0.4490	0.0154	0.0844
120	TGO	0.0452	0.1549	0.0115	0.0441	0.0735	0.0882
121	XWF	0.1852	0.1376	0.0378	0.2741	0.0372	0.2504
122	XCF	0.2812	0.0422	0.0259	0.1497	0.0372	0.1308
123	XAC	0.0436	0.0182	0.0582	0.0467	0.0406	0.1516
124	ETH	0.9792	0.0000	0.0000	0.1022	0.0245	0.0640
125	KEN	0.0261	0.1245	0.2145	0.0789	0.1071	0.2953
126	MDG	0.0027	0.1379	0.1485	0.0060	0.1377	0.1557
127	MWI	0.0000	0.0476	0.1190	0.0000	0.0370	0.2037
128	MUS	0.0346	0.0130	0.0043	0.0053	0.0479	0.0691
129	MOZ	0.0417	0.3103	0.1767	0.0000	0.1306	0.2399
130	RWA	0.2693	0.1089	0.3639	0.0000	0.0747	0.0747
131	TZA	0.0393	0.1631	0.3582	0.0014	0.1069	0.6279
132	UGA	0.2190	0.0924	0.0379	0.6216	0.0296	0.0176
133	ZMB	0.2276	0.0556	0.1528	0.6942	0.0261	0.0555
134	ZWE	0.0858	0.0467	0.3027	0.6721	0.0192	0.1334
135	XEC	0.2222	0.0785	0.0578	0.2225	0.0874	0.0419
136	BWA	0.0000	1.0000	0.0000	0.0269	0.1811	0.2010
137	NAM	0.0441	0.0000	0.0000	0.0482	0.0508	0.1525
138	ZAF	0.1253	0.0438	0.0864	0.0911	0.0761	0.0709
139	XSC	0.0559	0.0927	0.1629	0.0438	0.0379	0.1501
140	XTW	0.2000	0.0000	0.0000	0.6316	0.0000	0.0526

Table A-2-7. Production share.

CNO	CID	α_{RI}	α_{WH}	α_{MZ}	α_{XG}	α_{SB}	α_{XS}	α_{OS}	α_{OX}	α_{BF}	α_{SH}	α_{PK}	α_{PM}	α_{XM}	α_{EG}	α_{MK}	α_{SK}	α_{BT}	α_{CH}	β
Country No.	Country code	Rice	Wheat	Maize	Other grains	Soy-beans	Other oil crops	Soy-bean oil	Other veg. oil	Beef	Mutton	Pork	Poultry meat	Other meat	Poultry egg	Raw milk	Skim milk	Butter	Cheese	Total
1	AUS	0.0060	0.1777	0.0021	0.0565	0.0003	0.0427	0.0002	0.0223	0.1854	0.0675	0.0235	0.0524	0.0041	0.0204	0.1001	0.1926	0.0116	0.0347	1.0000
2	NZL	0.0002	0.0065	0.0026	0.0064	0.0000	0.0004	0.0000	0.0012	0.0823	0.0808	0.0068	0.0156	0.0036	0.0050	0.3522	0.3838	0.0299	0.0228	1.0000
3	XOC	0.0006	0.0179	0.0139	0.0001	0.0000	0.0431	0.0000	0.2169	0.1645	0.0088	0.0112	0.0156	0.0000	0.0068	0.3072	0.1904	0.0105	0.0000	1.0000
4	CHN	0.1286	0.0550	0.0851	0.0091	0.0100	0.0394	0.0137	0.0505	0.0590	0.0396	0.2544	0.0793	0.0100	0.0769	0.0297	0.0505	0.0025	0.0067	1.0000
5	HKG	0.0028	0.0042	0.0000	0.0000	0.0000	0.0000	0.0000	0.0012	0.1166	0.0023	0.6745	0.1428	0.0036	0.0038	0.0036	0.0000	0.0000	0.0000	1.0000
6	JPN	0.2491	0.0054	0.0000	0.0019	0.0035	0.0008	0.0031	0.0473	0.0746	0.0000	0.0668	0.0488	0.0003	0.0781	0.1030	0.2793	0.0219	0.0162	1.0000
7	KOR	0.2718	0.0008	0.0003	0.0013	0.0109	0.0150	0.0077	0.0258	0.1107	0.0015	0.1626	0.0722	0.0006	0.0452	0.0599	0.2000	0.0137	0.0000	1.0000
8	MNG	0.0001	0.0798	0.0000	0.0019	0.0000	0.0000	0.0000	0.0000	0.2332	0.4145	0.0024	0.0031	0.1415	0.0039	0.1054	0.0083	0.0004	0.0014	1.0000
9	TWN	0.1592	0.0002	0.0293	0.0031	0.0000	0.0003	0.0205	0.0259	0.0044	0.0019	0.3267	0.2214	0.0003	0.0733	0.0346	0.0944	0.0046	0.0000	1.0000
10	XEA	0.0378	0.0893	0.0010	0.0008	0.0018	0.0004	0.0009	0.0040	0.2153	0.3726	0.0559	0.0146	0.0496	0.0254	0.1305	0.0000	0.0000	0.0000	1.0000
11	BRN	0.0034	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0769	0.0042	0.0015	0.7945	0.0000	0.1196	0.0000	0.0000	0.0000	0.0000	1.0000
12	KHM	0.4597	0.0000	0.0371	0.0000	0.0136	0.0286	0.0016	0.0101	0.1199	0.0000	0.2606	0.0483	0.0000	0.0205	0.0000	0.0000	0.0000	0.0000	1.0000
13	IDN	0.2639	0.0002	0.0569	0.0000	0.0079	0.1500	0.0033	0.3370	0.0230	0.0080	0.0185	0.0577	0.0000	0.0224	0.0034	0.0477	0.0000	0.0000	1.0000
14	LAO	0.4801	0.0000	0.0412	0.0000	0.0026	0.0156	0.0001	0.0023	0.2430	0.0055	0.1130	0.0583	0.0000	0.0381	0.0001	0.0000	0.0000	0.0000	1.0000
15	MYS	0.0098	0.0000	0.0007	0.0000	0.0000	0.2673	0.0031	0.6112	0.0016	0.0002	0.0110	0.0390	0.0000	0.0210	0.0008	0.0342	0.0000	0.0000	1.0000
16	PHL	0.2589	0.0000	0.1031	0.0000	0.0000	0.0614	0.0005	0.1008	0.0344	0.0180	0.2233	0.1386	0.0013	0.0588	0.0010	0.0000	0.0000	0.0000	1.0000
17	SGP	0.0007	0.0006	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0027	0.0003	0.1534	0.5449	0.0001	0.2930	0.0043	0.0000	0.0000	0.0000	1.0000
18	THA	0.4354	0.0000	0.0408	0.0028	0.0028	0.0320	0.0065	0.0758	0.0360	0.0005	0.0969	0.1078	0.0000	0.0807	0.0180	0.0328	0.0000	0.0312	1.0000
19	VNM	0.5746	0.0001	0.0150	0.0000	0.0008	0.0057	0.0013	0.0130	0.0784	0.0029	0.1841	0.0827	0.0017	0.0397	0.0001	0.0000	0.0000	0.0000	1.0000
20	XSE	0.4779	0.0001	0.0152	0.0123	0.0012	0.0161	0.0001	0.0036	0.2390	0.0183	0.1147	0.0717	0.0011	0.0249	0.0001	0.0031	0.0001	0.0005	1.0000
21	BGD	0.6003	0.0260	0.0025	0.0000	0.0030	0.0202	0.0000	0.0341	0.0909	0.1245	0.0000	0.0136	0.0019	0.0474	0.0123	0.0223	0.0011	0.0001	1.0000
22	IND	0.1080	0.1012	0.0232	0.0277	0.0200	0.0921	0.0044	0.0415	0.0450	0.0201	0.0041	0.0380	0.0056	0.0434	0.2820	0.1318	0.0072	0.0000	1.0000
23	NPL	0.2606	0.0776	0.0930	0.0244	0.0006	0.0091	0.0007	0.0166	0.0350	0.0334	0.0177	0.0372	0.0000	0.0588	0.2822	0.0508	0.0023	0.0000	1.0000
24	PAK	0.0918	0.1371	0.0077	0.0017	0.0000	0.0871	0.0000	0.0445	0.0128	0.0134	0.0000	0.0112	0.0006	0.0088	0.1046	0.4562	0.0225	0.0000	1.0000
25	LKA	0.5074	0.0000	0.0097	0.0005	0.0000	0.0111	0.0001	0.0283	0.0168	0.0012	0.0005	0.0784	0.0000	0.0591	0.1060	0.1741	0.0067	0.0000	1.0000
26	XSA	0.2482	0.0747	0.0401	0.0777	0.0000	0.0175	0.0000	0.0113	0.0270	0.0402	0.0000	0.0500	0.0181	0.0505	0.2768	0.0619	0.0030	0.0027	1.0000
27	CAN	0.0003	0.1326	0.0257	0.0495	0.0324	0.1307	0.0029	0.0760	0.0789	0.0009	0.0511	0.0489	0.0003	0.0178	0.0994	0.2118	0.0072	0.0337	1.0000
28	USA	0.0068	0.0575	0.1925	0.0122	0.0951	0.0095	0.0095	0.0168	0.1395	0.0005	0.0513	0.0777	0.0006	0.0251	0.1087	0.1285	0.0094	0.0589	1.0000
29	MEX	0.0013	0.0226	0.1009	0.0552	0.0001	0.0018	0.0054	0.0448	0.0796	0.0058	0.0578	0.1213	0.0015	0.0834	0.0990	0.2102	0.0117	0.0976	1.0000
30	XNA	0.0075	0.2246	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1845	0.0072	0.0406	0.0513	0.0000	0.1880	0.2964	0.0000	0.0000	0.0000	1.0000
31	ARG	0.0075	0.0681	0.0835	0.0675	0.3113	0.0116	0.0464	0.0572	0.1493	0.0047	0.0074	0.0325	0.0014	0.0088	0.0592	0.0533	0.0028	0.0274	1.0000
32	BOL	0.0449	0.0170	0.0564	0.0572	0.2461	0.0273	0.0467	0.1074	0.0867	0.0056	0.0102	0.1431	0.0030	0.0204	0.0329	0.0751	0.0021	0.0180	1.0000
33	BRA	0.0245	0.0141	0.0996	0.0021	0.1685	0.0308	0.0354	0.0334	0.1896	0.0024	0.0280	0.0958	0.0000	0.0231	0.0874	0.1575	0.0053	0.0025	1.0000
34	CHL	0.0141	0.0570	0.0397	0.0173	0.0000	0.0146	0.0069	0.0415	0.0717	0.0030	0.1116	0.1416	0.0015	0.0651	0.1134	0.2646	0.0077	0.0287	1.0000
35	COL	0.0599	0.0013	0.0209	0.0012	0.0064	0.0240	0.0033	0.1005	0.1895	0.0026	0.0312	0.1320	0.0085	0.0668	0.1527	0.1775	0.0058	0.0158	1.0000
36	ECU	0.1310	0.0025	0.0876	0.0034	0.0043	0.0125	0.0021	0.1931	0.0719	0.0022	0.0413	0.1135	0.0008	0.0204	0.2227	0.0483	0.0010	0.0414	1.0000
37	PRY	0.0184	0.0395	0.0737	0.0017	0.3900	0.0195	0.0199	0.0360	0.0807	0.0011	0.0655	0.0596	0.0002	0.0329	0.1216	0.0380	0.0018	0.0000	1.0000
38	PER	0.0546	0.1089	0.0855	0.0265	0.0004	0.0349	0.0003	0.1251	0.0503	0.0124	0.0168	0.1489	0.0023	0.0350	0.1410	0.0054	0.0054	0.0378	1.0000
39	URY	0.0729	0.0889	0.0080	0.0112	0.1685	0.0024	0.0024	0.0054	0.2675	0.0284	0.0075	0.0352	0.0032	0.0265	0.0848	0.1581	0.0061	0.0230	1.0000
40	VEN	0.0573	0.0001	0.0860	0.0092	0.0015	0.0102	0.0042	0.0042	0.1635	0.0049	0.0582	0.2134	0.0006	0.0758	0.1693	0.0175	0.0005	0.0773	1.0000
41	XSM	0.2401	0.0197	0.0775	0.0000	0.0000	0.0173	0.0000	0.0883	0.0505	0.0221	0.0095	0.1694	0.0000	0.0149	0.0781	0.2041	0.0085	0.0000	1.0000
42	CRI	0.0367	0.0002	0.0029	0.0000	0.0000	0.0218	0.0132	0.1244	0.0901	0.0000	0.0120	0.1433	0.0000	0.0549	0.1670	0.2832	0.0164	0.0337	1.0000
43	GTM	0.0045	0.0016	0.2606	0.0110	0.0035	0.0386	0.0059	0.1084	0.1348	0.0073	0.0384	0.1144	0.0006	0.1049	0.0538	0.0664	0.0038	0.0415	1.0000
44	HND	0.0094	0.0006	0.1145	0.0072	0.0030	0.1150	0.0002	0.2145	0.0149	0.0001	0.0108	0.0911	0.0001	0.0522	0.1863	0.1514	0.0088	0.0198	1.0000
45	NIC	0.1138	0.0001	0.1458	0.0304	0.0022	0.1148	0.0003	0.0306	0.0927	0.0001	0.0141	0.1490	0.0015	0.0501	0.1481	0.0231	0.0012	0.0822	1.0000
46	PAN	0.1627	0.0026	0.0407	0.0009	0.0001	0.0060	0.0000	0.0157	0.1870	0.0000	0.0043	0.3143	0.0000	0.0424	0.1076	0.0062	0.0003	0.1092	1.0000

Table A-2-7. Production share (continued).

CNO	CID	α_{RI}	α_{WH}	α_{MZ}	α_{XG}	α_{SB}	α_{XS}	α_{OS}	α_{OX}	α_{BF}	α_{SH}	α_{PK}	α_{PM}	α_{XM}	α_{EG}	α_{MK}	α_{SK}	α_{BT}	α_{CH}	β
Country No.	Country code	Rice	Wheat	Maize	Other grains	Soy-beans	Other oil crops	Soy-bean oil	Other veg. oil	Beef	Mutton	Pork	Poultry meat	Other meat	Poultry egg	Raw milk	Skim milk	Butter	Cheese	Total
47	SLV	0.0305	0.0001	0.2535	0.0419	0.0008	0.0305	0.0000	0.0106	0.0551	0.0003	0.0151	0.1467	0.0000	0.0965	0.1557	0.0866	0.0045	0.0717	1.0000
48	XCA	0.0370	0.7756	0.0271	0.0112	0.0022	0.0020	0.0075	0.0104	0.0219	0.0005	0.0038	0.0381	0.0000	0.0051	0.0576	0.0000	0.0000	0.0000	1.0000
49	DOM	0.1495	0.0002	0.0089	0.0003	0.0000	0.0005	0.0002	0.0361	0.0974	0.0013	0.0786	0.1600	0.0000	0.0746	0.1205	0.2334	0.0108	0.0276	1.0000
50	JAM	0.0005	0.0006	0.3216	0.0000	0.0000	0.0220	0.0000	0.0178	0.0510	0.0188	0.0540	0.4574	0.0003	0.0195	0.0365	0.0000	0.0000	0.0000	1.0000
51	PRI	0.1078	0.1109	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0438	0.0006	0.1609	0.3275	0.0000	0.1527	0.0958	0.0000	0.0000	0.0000	1.0000
52	TTO	0.0233	0.0004	0.0001	0.0000	0.0000	0.0011	0.0722	0.1165	0.0303	0.0043	0.0455	0.6164	0.0002	0.0217	0.0670	0.0000	0.0000	0.0000	1.0000
53	XCB	0.0707	0.1012	0.1297	0.0092	0.0000	0.0394	0.0137	0.0860	0.0482	0.0161	0.1195	0.0265	0.0062	0.0560	0.1193	0.0321	0.0015	0.1247	1.0000
54	AUT	0.0005	0.0407	0.0459	0.0342	0.0051	0.0251	0.0001	0.0256	0.1066	0.0033	0.0894	0.0166	0.0010	0.0281	0.1492	0.3272	0.0162	0.0869	1.0000
55	BEL	0.0025	0.0273	0.0078	0.0050	0.0000	0.0147	0.0012	0.0873	0.0965	0.0007	0.1178	0.0349	0.0005	0.0100	0.0894	0.4621	0.0229	0.0195	1.0000
56	CYP	0.0003	0.0253	0.0000	0.0207	0.0000	0.0095	0.0000	0.0100	0.0319	0.0516	0.1404	0.1141	0.0321	0.0355	0.1589	0.0000	0.0000	0.3697	1.0000
57	CZE	0.0002	0.0981	0.0188	0.0533	0.0006	0.0684	0.0003	0.0293	0.0169	0.0009	0.0320	0.0159	0.0063	0.0163	0.1071	0.4316	0.0249	0.0791	1.0000
58	DNK	0.0003	0.0608	0.0006	0.0505	0.0000	0.0161	0.0008	0.0269	0.0254	0.0003	0.2748	0.0271	0.0003	0.0176	0.1256	0.2890	0.0101	0.0737	1.0000
59	EST	0.0002	0.0331	0.0000	0.0436	0.0000	0.0355	0.0000	0.0269	0.0120	0.0009	0.0489	0.0145	0.0003	0.0114	0.1245	0.4974	0.0299	0.1208	1.0000
60	FIN	0.0003	0.0242	0.0000	0.0658	0.0000	0.0089	0.0001	0.0131	0.0296	0.0003	0.0733	0.0327	0.0021	0.0204	0.1594	0.4806	0.0315	0.0578	1.0000
61	FRA	0.0007	0.1300	0.0362	0.0359	0.0008	0.0472	0.0004	0.0222	0.0881	0.0090	0.0417	0.0432	0.0047	0.0223	0.1228	0.3035	0.0166	0.0749	1.0000
62	DEU	0.0005	0.0771	0.0097	0.0353	0.0000	0.0291	0.0030	0.0270	0.0507	0.0017	0.0981	0.0330	0.0011	0.0262	0.1628	0.3449	0.0174	0.0825	1.0000
63	GRC	0.0096	0.0576	0.0587	0.0160	0.0000	0.0274	0.0039	0.1483	0.0744	0.0817	0.0313	0.0281	0.0051	0.0386	0.1443	0.0479	0.0014	0.2257	1.0000
64	HUN	0.0003	0.0890	0.1204	0.0601	0.0064	0.1011	0.0010	0.0331	0.0771	0.0053	0.0856	0.0584	0.0038	0.0320	0.0575	0.1631	0.0050	0.1008	1.0000
65	IRL	0.0002	0.0142	0.0000	0.0250	0.0000	0.0015	0.0001	0.0035	0.2046	0.0204	0.0418	0.0115	0.0003	0.0061	0.1737	0.4310	0.0302	0.0359	1.0000
66	ITA	0.0085	0.0455	0.0513	0.0097	0.0006	0.0113	0.0079	0.0638	0.0679	0.0038	0.0871	0.0424	0.0155	0.0260	0.1208	0.2686	0.0137	0.1556	1.0000
67	LVA	0.0006	0.0892	0.0000	0.0293	0.0000	0.0413	0.0002	0.0109	0.0350	0.0014	0.0186	0.0115	0.0003	0.0204	0.0959	0.5334	0.0174	0.0948	1.0000
68	LTU	0.0003	0.1125	0.0021	0.0667	0.0000	0.0686	0.0000	0.0130	0.0191	0.0004	0.0375	0.0308	0.0010	0.0233	0.1399	0.3721	0.0098	0.1030	1.0000
69	LUX	0.0001	0.0121	0.0003	0.0107	0.0000	0.0144	0.0003	0.0183	0.1635	0.0013	0.0162	0.0063	0.0001	0.0049	0.0690	0.6754	0.0069	0.0000	1.0000
70	MLT	0.0004	0.0096	0.0000	0.0165	0.0000	0.0004	0.0000	0.0095	0.0087	0.0009	0.1748	0.0871	0.1290	0.1861	0.1205	0.0000	0.0000	0.2565	1.0000
71	NLD	0.0005	0.0094	0.0039	0.0059	0.0000	0.0040	0.0053	0.0221	0.0721	0.0037	0.0890	0.0483	0.0001	0.0384	0.1925	0.3500	0.0246	0.1303	1.0000
72	POL	0.0002	0.0512	0.0062	0.0694	0.0000	0.0252	0.0000	0.0206	0.0237	0.0001	0.0875	0.0494	0.0018	0.0243	0.0908	0.4258	0.0263	0.0976	1.0000
73	PRT	0.0089	0.0028	0.0247	0.0041	0.0000	0.0345	0.0100	0.0382	0.0651	0.0110	0.1288	0.0382	0.0022	0.0444	0.1132	0.4042	0.0204	0.0492	1.0000
74	SVK	0.0003	0.0578	0.0403	0.0287	0.0033	0.0524	0.0013	0.0302	0.0354	0.0012	0.0421	0.0251	0.0043	0.0333	0.0742	0.4373	0.0165	0.1163	1.0000
75	SVN	0.0003	0.0258	0.0237	0.0218	0.0012	0.0704	0.0000	0.1030	0.0554	0.0035	0.0384	0.0507	0.0007	0.0099	0.1018	0.4227	0.0168	0.0539	1.0000
76	ESP	0.0067	0.0390	0.0157	0.0588	0.0000	0.0521	0.0127	0.0858	0.0820	0.0060	0.1393	0.0619	0.0032	0.0474	0.0674	0.2762	0.0073	0.0383	1.0000
77	SWE	0.0003	0.0471	0.0000	0.0475	0.0000	0.0197	0.0005	0.0403	0.0382	0.0018	0.0382	0.0225	0.0148	0.0332	0.1218	0.5019	0.0183	0.0537	1.0000
78	GBR	0.0005	0.0792	0.0000	0.0324	0.0000	0.0425	0.0017	0.0235	0.1417	0.0381	0.0420	0.0648	0.0003	0.0199	0.1276	0.3117	0.0200	0.0540	1.0000
79	CHE	0.0004	0.0194	0.0200	0.0431	0.0005	0.0197	0.0011	0.0319	0.0881	0.0034	0.0564	0.0164	0.0018	0.0209	0.1411	0.3768	0.0334	0.1256	1.0000
80	NOR	0.0004	0.0150	0.0000	0.0325	0.0000	0.0014	0.0064	0.0134	0.0791	0.0187	0.0641	0.0315	0.0048	0.0239	0.1387	0.4658	0.0188	0.0855	1.0000
81	XEF	0.0004	0.0252	0.0000	0.0000	0.0000	0.0000	0.0000	0.0682	0.0295	0.0507	0.0447	0.0530	0.0138	0.0283	0.1491	0.4205	0.0225	0.0942	1.0000
82	ALB	0.0000	0.0521	0.0130	0.0018	0.0002	0.0441	0.0001	0.0047	0.0840	0.0520	0.0359	0.0343	0.0004	0.0649	0.3562	0.1807	0.0131	0.0623	1.0000
83	BGR	0.0187	0.1820	0.0813	0.0386	0.0002	0.1891	0.0003	0.0710	0.0284	0.0442	0.0244	0.0272	0.0034	0.0284	0.1079	0.0278	0.0020	0.1249	1.0000
84	BLR	0.0637	0.0119	0.0201	0.1114	0.0000	0.0169	0.0000	0.0008	0.1783	0.0008	0.0524	0.0306	0.0002	0.0211	0.0699	0.3563	0.0248	0.0412	1.0000
85	HRV	0.0000	0.1198	0.0950	0.0211	0.0388	0.0388	0.0018	0.0110	0.1192	0.0156	0.1208	0.0232	0.0043	0.0510	0.2151	0.0835	0.0063	0.0346	1.0000
86	ROU	0.0014	0.0891	0.1432	0.0385	0.0206	0.1081	0.0038	0.2175	0.0191	0.0121	0.0291	0.0173	0.0007	0.0385	0.0072	0.1045	0.0072	0.0704	1.0000
87	RUS	0.0075	0.1142	0.0078	0.0467	0.0204	0.0170	0.0040	0.0410	0.0644	0.0060	0.0784	0.0665	0.0052	0.0439	0.1573	0.2641	0.0133	0.0422	1.0000
88	UKR	0.0007	0.1217	0.0887	0.1051	0.0691	0.0539	0.0023	0.1065	0.0342	0.0016	0.0453	0.0547	0.0010	0.0473	0.1093	0.1252	0.0087	0.0248	1.0000
89	XEE	0.0007	0.0965	0.1128	0.0339	0.0902	0.0675	0.0045	0.0661	0.0403	0.0077	0.0924	0.0505	0.0002	0.0346	0.1348	0.1397	0.0091	0.0186	1.0000
90	XER	0.0020	0.0822	0.1004	0.0154	0.0425	0.0049	0.0052	0.1888	0.0801	0.0287	0.1174	0.0292	0.0000	0.0530	0.1789	0.1768	0.0112	0.0533	1.0000
91	KAZ	0.0048	0.2233	0.0020	0.0173	0.0001	0.0091	0.0002	0.0071	0.0853	0.0309	0.0207	0.0086	0.0117	0.0170	0.1186	0.3901	0.0207	0.0309	1.0000
92	KGZ	0.0026	0.0754	0.0260	0.0121	0.0000	0.0095	0.0000	0.0006	0.2183	0.1119	0.0783	0.0193	0.0986	0.0828	0.1476	0.0959	0.0078	0.0133	1.0000
93	XSU	0.0030	0.1038	0.0194	0.0155	0.0000	0.0115	0.0000	0.0036	0.2550	0.0437	0.0197	0.0381	0.0548	0.1304	0.1470	0.1051	0.0073	0.0419	1.0000

Appendix 3 Elasticities

Table A-3-1. Elasticity of supply for rice.

CNO	PIID	CID	P_RI	P_WH	P_MZ	P_XG	P_SB	P_XS	AP	VP	L	K	A _{t-1}
Country No.	Prod. code	Country code	Price of RI	Price of WH	Price of MZ	Price of XG	Price of SB	Price of XS	Price of land	Price of chemic.	Labor input	Capital input	Area t-1
1	RI	AUS	0.261	-0.082	0.000	-0.024	0.000	-0.010	-0.133	-0.128	0.118	0.177	0.320
2	RI	NZL	0.071	-0.017	-0.005	-0.024	0.000	-0.001	-0.048	-0.024	0.071	0.071	0.320
3	RI	XOC	0.083	0.000	-0.001	0.000	0.000	-0.113	-0.083	0.000	0.000	0.000	0.320
4	RI	CHN	0.412	-0.037	-0.050	-0.004	-0.011	-0.029	-0.278	-0.134	0.454	0.115	0.320
5	RI	HKG	0.580	0.000	0.000	0.000	0.000	0.000	-0.380	-0.200	0.360	0.080	0.320
6	RI	JPN	0.245	-0.009	0.000	-0.004	-0.005	0.000	-0.131	-0.113	0.343	0.226	0.320
7	RI	KOR	0.778	-0.003	-0.004	-0.012	-0.024	-0.020	-0.615	-0.163	0.391	0.109	0.320
8	RI	MNG	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.320
9	RI	TWN	0.284	-0.001	-0.007	-0.001	0.000	-0.008	-0.218	-0.066	0.251	0.046	0.320
10	RI	XEA	0.517	-0.006	-0.057	-0.017	-0.040	-0.002	-0.380	-0.137	0.362	0.074	0.320
11	RI	BRN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.320
12	RI	KHM	0.845	0.000	-0.021	0.000	-0.009	-0.008	-0.655	-0.190	0.524	0.090	0.320
13	RI	IDN	0.751	0.000	-0.072	0.000	-0.010	-0.197	-0.693	-0.058	0.566	0.095	0.320
14	RI	LAO	0.943	0.000	-0.091	0.000	-0.003	-0.018	-0.918	-0.025	0.734	0.126	0.320
15	RI	MYS	2.357	0.000	-0.001	0.000	0.000	-1.075	-2.014	-0.343	1.494	0.276	0.320
16	RI	PHL	0.749	0.000	-0.088	0.000	0.000	-0.138	-0.557	-0.192	0.624	0.054	0.320
17	RI	SGP	0.619	0.000	0.000	0.000	0.000	0.000	-0.571	-0.048	0.429	0.095	0.320
18	RI	THA	0.966	0.000	-0.024	-0.004	-0.001	-0.019	-0.655	-0.311	0.533	0.090	0.320
19	RI	VNM	1.034	0.000	-0.044	0.000	-0.004	-0.011	-0.710	-0.324	0.568	0.097	0.320
20	RI	XSE	0.921	-0.003	-0.020	-0.020	-0.008	-0.185	-0.908	-0.012	0.727	0.125	0.320
21	RI	BGD	0.537	-0.005	-0.003	-0.001	-0.001	-0.005	-0.340	-0.197	0.291	0.139	0.320
22	RI	IND	0.626	-0.085	-0.021	-0.048	-0.026	-0.083	-0.576	-0.050	0.493	0.236	0.320
23	RI	NPL	0.319	-0.038	-0.046	-0.015	-0.001	-0.019	-0.318	-0.001	0.623	0.154	0.320
24	RI	PAK	2.068	-0.221	-0.017	-0.012	0.000	-0.057	-0.672	-1.396	0.561	0.275	0.320
25	RI	LKA	0.754	0.000	-0.014	-0.001	-0.001	-0.116	-0.644	-0.110	0.538	0.263	0.320
26	RI	XSA	0.662	-0.372	-0.020	-0.025	0.000	-0.009	-0.594	-0.068	0.506	0.243	0.320
27	RI	CAN	0.092	-0.023	-0.003	-0.008	-0.003	-0.021	-0.057	-0.034	0.132	0.149	0.320
28	RI	USA	0.316	-0.023	-0.049	-0.004	-0.041	-0.007	-0.196	-0.120	0.027	0.238	0.320
29	RI	MEX	0.414	-0.011	-0.184	-0.041	-0.003	-0.011	-0.317	-0.097	0.511	0.283	0.320
30	RI	XNA	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.200	0.000	0.320
31	RI	ARG	0.270	-0.016	-0.014	-0.009	-0.101	-0.011	-0.198	-0.072	0.135	0.177	0.320
32	RI	BOL	0.240	-0.008	-0.019	-0.013	-0.079	-0.018	-0.210	-0.030	0.331	0.187	0.320
33	RI	BRA	0.372	-0.003	-0.023	-0.002	-0.052	-0.003	-0.136	-0.237	0.193	0.509	0.320
34	RI	CHL	0.464	-0.068	-0.028	-0.031	0.000	-0.007	-0.204	-0.260	0.318	0.182	0.320
35	RI	COL	0.538	-0.001	-0.074	-0.002	-0.003	-0.031	-0.255	-0.283	0.175	0.228	0.320
36	RI	ECU	0.333	0.000	-0.051	-0.003	-0.004	-0.018	-0.172	-0.160	0.184	0.154	0.320
37	RI	PRY	0.481	-0.022	-0.034	-0.001	-0.143	-0.012	-0.327	-0.155	0.255	0.291	0.320
38	RI	PER	0.459	-0.027	-0.105	-0.038	0.000	-0.016	-0.405	-0.055	0.654	0.058	0.320
39	RI	URY	0.336	-0.040	-0.007	-0.012	-0.077	-0.002	-0.233	-0.102	0.296	0.208	0.320
40	RI	VEN	0.374	0.000	-0.110	-0.023	-0.004	-0.025	-0.252	-0.122	0.404	0.225	0.320
41	RI	XSM	0.689	0.000	-0.002	0.000	0.000	-0.011	-0.252	-0.437	0.369	0.225	0.320
42	RI	CRI	0.788	0.000	-0.008	0.000	0.000	-0.101	-0.261	-0.527	0.292	0.233	0.320
43	RI	GTM	0.467	0.000	-0.222	-0.004	-0.002	-0.017	-0.287	-0.180	0.427	0.253	0.320
44	RI	HND	0.302	0.000	-0.110	-0.007	0.000	-0.034	-0.173	-0.128	0.285	0.156	0.320
45	RI	NIC	0.414	0.000	-0.137	-0.012	-0.001	-0.012	-0.254	-0.159	0.274	0.227	0.320
46	RI	PAN	0.247	0.000	-0.047	-0.001	0.000	-0.009	-0.238	-0.009	0.381	0.213	0.320
47	RI	SLV	0.483	0.000	-0.184	-0.047	-0.001	-0.004	-0.282	-0.201	0.442	0.250	0.320
48	RI	BLZ	0.402	0.000	-0.091	-0.019	-0.001	-0.001	-0.172	-0.230	0.253	0.149	0.320
49	RI	DOM	0.559	0.000	-0.008	0.000	0.000	-0.025	-0.179	-0.380	0.227	0.160	0.320
50	RI	JAM	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.333	0.333	0.320
51	RI	PRI	0.377	0.000	-0.127	0.000	0.000	-0.135	-0.266	-0.111	0.338	0.237	0.320
52	RI	TTO	0.033	0.000	-0.008	0.000	0.000	-0.017	-0.033	0.000	0.033	0.017	0.320
53	RI	XCB	0.373	0.000	-0.116	-0.021	0.000	-0.016	-0.279	-0.094	0.354	0.249	0.320
54	RI	AUT	0.075	-0.007	-0.005	-0.008	-0.001	-0.002	-0.025	-0.050	0.200	0.075	0.320
55	RI	BEL	0.016	-0.002	-0.001	0.000	0.000	0.000	-0.003	-0.014	0.019	0.008	0.320
56	RI	CYP	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.333	0.000	0.320
57	RI	CZE	0.043	-0.025	-0.003	-0.013	0.000	-0.013	-0.043	0.000	0.043	0.000	0.320
58	RI	DNK	0.085	-0.020	0.000	-0.023	0.000	-0.003	-0.043	-0.043	0.085	0.149	0.320
59	RI	EST	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.320
60	RI	FIN	0.083	-0.011	0.000	-0.043	0.000	-0.004	-0.042	-0.042	0.125	0.042	0.320
61	RI	FRA	0.152	-0.041	-0.009	-0.013	0.000	-0.014	-0.090	-0.063	0.478	0.168	0.320
62	RI	DEU	0.109	-0.021	-0.003	-0.018	0.000	-0.008	-0.055	-0.055	0.134	0.060	0.320
63	RI	GRC	0.146	-0.022	-0.006	-0.007	0.000	-0.056	-0.090	-0.056	0.550	0.172	0.320
64	RI	HUN	0.480	-0.087	-0.104	-0.038	-0.003	-0.069	-0.440	-0.040	0.440	0.160	0.320
65	RI	IRL	0.138	-0.012	0.000	-0.040	0.000	-0.001	-0.034	-0.103	0.000	0.069	0.320
66	RI	ITA	0.130	-0.034	-0.017	-0.007	-0.002	-0.022	-0.120	-0.011	0.451	0.229	0.320
67	RI	LVA	0.182	-0.051	0.000	-0.029	0.000	-0.015	-0.091	-0.091	0.182	0.000	0.320
68	RI	LTU	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.320
69	RI	LUX	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.320
70	RI	MLT	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.320
71	RI	NLD	0.094	-0.029	-0.002	-0.004	0.000	0.000	-0.036	-0.058	0.115	0.065	0.320
72	RI	POL	0.188	-0.042	-0.006	-0.090	0.000	-0.014	-0.125	-0.063	0.172	0.047	0.320

Table A-3-2. Elasticity of supply for wheat.

CNO	PID	CID	P_RI	P_WH	P_MZ	P_XG	P_SB	P_XS	AP	VP	L	K	A _{t-1}
Country No.	Prod. code	Country code	Price of RI	Price of WH	Price of MZ	Price of XG	Price of SB	Price of XS	Price of land	Price of chemic.	Labor input	Capital input	Area t-1
1	WH	AUS	0.000	0.262	0.000	-0.031	0.000	-0.013	-0.169	-0.093	0.150	0.226	0.800
2	WH	NZL	0.000	0.155	-0.006	-0.031	0.000	-0.001	-0.066	-0.089	0.106	0.112	0.800
3	WH	XOC	-0.001	0.361	-0.002	0.000	0.000	-0.287	-0.265	-0.095	0.085	0.061	0.800
4	WH	CHN	-0.033	0.468	-0.036	-0.003	-0.008	-0.021	-0.207	-0.260	0.339	0.086	0.800
5	WH	HKG	0.000	0.315	0.000	0.000	0.000	0.000	-0.180	-0.135	0.180	0.034	0.800
6	WH	JPN	-0.103	0.497	0.000	-0.005	-0.005	0.000	-0.187	-0.310	0.486	0.321	0.800
7	WH	KOR	-0.379	0.561	-0.004	-0.010	-0.020	-0.016	-0.455	-0.106	0.288	0.083	0.800
8	WH	MNG	0.000	0.129	0.000	-0.002	0.000	-0.001	-0.118	-0.011	0.194	0.049	0.800
9	WH	TWN	-0.418	0.700	-0.017	-0.002	0.000	-0.019	-0.700	0.000	0.700	0.100	0.800
10	WH	XEA	-0.065	0.247	-0.043	-0.013	-0.030	-0.002	-0.236	-0.011	0.226	0.047	0.800
11	WH	BRN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.800
12	WH	KHM	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.800
13	WH	IDN	-0.046	0.068	-0.012	0.000	-0.002	-0.032	-0.068	0.000	0.053	0.008	0.800
14	WH	LAO	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.800
15	WH	MYS	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.800
16	WH	PHL	-0.066	0.125	-0.031	0.000	0.000	-0.048	-0.125	0.000	0.125	0.000	0.800
17	WH	SGP	0.000	0.588	0.000	0.000	0.000	0.000	-0.529	-0.059	0.412	0.059	0.800
18	WH	THA	-0.430	0.400	-0.021	-0.004	-0.001	-0.016	-0.400	0.000	0.400	0.000	0.800
19	WH	VNM	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.800
20	WH	XSE	-0.114	0.111	-0.004	-0.004	-0.002	-0.039	-0.111	0.000	0.000	0.000	0.800
21	WH	BGD	-0.145	0.377	-0.002	0.000	0.000	-0.002	-0.148	-0.229	0.127	0.061	0.800
22	WH	IND	-0.088	0.661	-0.014	-0.032	-0.017	-0.055	-0.393	-0.268	0.336	0.161	0.800
23	WH	NPL	-0.082	0.301	-0.044	-0.014	-0.001	-0.018	-0.300	-0.001	0.586	0.145	0.800
24	WH	PAK	-0.090	1.279	-0.024	-0.018	0.000	-0.084	-0.732	-0.547	0.611	0.300	0.800
25	WH	LKA	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.800
26	WH	XSA	-0.023	0.559	-0.019	-0.024	0.000	-0.009	-0.537	-0.022	0.457	0.220	0.800
27	WH	CAN	0.000	0.270	-0.004	-0.011	-0.005	-0.030	-0.094	-0.175	0.224	0.254	0.800
28	WH	USA	-0.001	0.295	-0.046	-0.004	-0.038	-0.006	-0.182	-0.113	0.025	0.221	0.800
29	WH	MEX	0.000	0.304	-0.143	-0.032	-0.002	-0.009	-0.226	-0.078	0.364	0.202	0.800
30	WH	XNA	0.000	0.271	0.000	0.000	0.000	0.000	-0.110	-0.161	0.144	0.119	0.800
31	WH	ARG	-0.001	0.327	-0.015	-0.010	-0.109	-0.012	-0.223	-0.104	0.153	0.199	0.800
32	WH	BOL	-0.004	0.127	-0.009	-0.006	-0.037	-0.009	-0.089	-0.038	0.143	0.080	0.800
33	WH	BRA	-0.004	0.406	-0.024	-0.002	-0.053	-0.003	-0.143	-0.263	0.204	0.538	0.800
34	WH	CHL	-0.004	0.395	-0.024	-0.027	0.000	-0.006	-0.166	-0.229	0.259	0.149	0.800
35	WH	COL	-0.076	0.436	-0.092	-0.003	-0.004	-0.038	-0.296	-0.140	0.207	0.268	0.800
36	WH	ECU	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.800
37	WH	PRY	-0.002	0.436	-0.027	-0.001	-0.115	-0.009	-0.254	-0.182	0.198	0.227	0.800
38	WH	PER	-0.071	0.404	-0.095	-0.035	0.000	-0.015	-0.353	-0.052	0.570	0.050	0.800
39	WH	URY	-0.006	0.418	-0.004	-0.006	-0.039	-0.001	-0.124	-0.294	0.158	0.111	0.800
40	WH	VEN	-0.024	0.385	-0.100	-0.021	-0.004	-0.022	-0.231	-0.154	0.385	0.231	0.800
41	WH	XSM	-0.156	0.210	-0.001	0.000	0.000	-0.008	-0.127	-0.083	0.185	0.115	0.800
42	WH	CRI	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.800
43	WH	GTM	-0.001	0.238	-0.131	-0.003	-0.001	-0.010	-0.143	-0.095	0.206	0.127	0.800
44	WH	HND	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.800
45	WH	NIC	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.800
46	WH	PAN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.800
47	WH	SLV	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.800
48	WH	BLZ	-0.008	0.148	-0.053	-0.011	-0.001	-0.001	-0.082	-0.066	0.123	0.073	0.800
49	WH	DOM	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.800
50	WH	JAM	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.800
51	WH	PRI	0.000	0.276	-0.102	0.000	0.000	-0.108	-0.198	-0.078	0.252	0.177	0.800
52	WH	TTO	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.800
53	WH	XCB	-0.044	0.299	-0.111	-0.020	0.000	-0.015	-0.254	-0.045	0.323	0.227	0.800
54	WH	AUT	0.000	0.149	-0.020	-0.031	-0.003	-0.010	-0.111	-0.038	0.631	0.212	0.800
55	WH	BEL	0.000	0.830	-0.012	-0.009	0.000	-0.003	-0.095	-0.735	0.438	0.181	0.800
56	WH	CYP	0.000	0.190	0.000	-0.110	0.000	-0.026	-0.105	-0.085	0.551	0.312	0.800
57	WH	CZE	0.000	0.461	-0.012	-0.062	-0.001	-0.060	-0.285	-0.176	0.249	0.098	0.800
58	WH	DNK	0.000	0.187	0.000	-0.034	0.000	-0.005	-0.069	-0.117	0.158	0.250	0.800
59	WH	EST	0.000	0.295	0.000	-0.108	0.000	-0.052	-0.229	-0.066	0.316	0.098	0.800
60	WH	FIN	0.000	0.400	0.000	-0.035	0.000	-0.004	-0.044	-0.356	0.224	0.085	0.800
61	WH	FRA	0.000	0.270	-0.006	-0.009	0.000	-0.009	-0.067	-0.203	0.360	0.127	0.800
62	WH	DEU	0.000	0.145	-0.004	-0.029	0.000	-0.013	-0.091	-0.054	0.227	0.103	0.800
63	WH	GRC	-0.001	0.117	-0.004	-0.005	0.000	-0.040	-0.063	-0.054	0.384	0.120	0.800
64	WH	HUN	0.000	0.362	-0.069	-0.025	-0.002	-0.046	-0.268	-0.094	0.266	0.092	0.800
65	WH	IRL	0.000	0.373	0.000	-0.093	0.000	-0.003	-0.095	-0.277	0.018	0.181	0.800
66	WH	ITA	-0.003	0.127	-0.012	-0.005	-0.002	-0.016	-0.086	-0.041	0.323	0.164	0.800
67	WH	LVA	0.000	0.332	0.000	-0.060	0.000	-0.031	-0.213	-0.119	0.382	0.091	0.800
68	WH	LTU	0.000	0.436	-0.001	-0.092	0.000	-0.032	-0.190	-0.246	0.378	0.081	0.800
69	WH	LUX	0.000	0.173	-0.001	-0.054	0.000	-0.013	-0.120	-0.053	0.520	0.227	0.800
70	WH	MLT	0.000	0.158	0.000	-0.010	0.000	0.000	-0.105	-0.053	0.526	0.158	0.800
71	WH	NLD	0.000	0.301	-0.003	-0.007	0.000	-0.001	-0.068	-0.232	0.233	0.130	0.800
72	WH	POL	0.000	0.400	-0.009	-0.141	0.000	-0.022	-0.232	-0.168	0.337	0.079	0.800

Table A-3-3. Elasticity of supply for maize.

CNO	PID	CID	P_RI	P_WH	P_MZ	P_XG	P_SB	P_XS	AP	VP	L	K	A _{t-1}
Country No.	Prod. code	Country code	Price of RI	Price of WH	Price of MZ	Price of XG	Price of SB	Price of XS	Price of land	Price of chemic.	Labor input	Capital input	Area t-1
1	MZ	AUS	0.000	-0.068	0.262	-0.020	0.000	-0.008	-0.111	-0.151	0.098	0.148	0.800
2	MZ	NZL	0.000	-0.022	0.159	-0.031	0.000	-0.001	-0.066	-0.093	0.107	0.114	0.800
3	MZ	XOC	-0.001	0.000	0.391	0.000	0.000	-0.287	-0.271	-0.120	0.084	0.062	0.800
4	MZ	CHN	-0.034	-0.027	0.358	-0.003	-0.008	-0.022	-0.199	-0.159	0.325	0.082	0.800
5	MZ	HKG	0.000	0.000	0.377	0.000	0.000	0.000	-0.208	-0.169	0.195	0.039	0.800
6	MZ	JPN	-0.091	-0.009	0.366	-0.004	-0.005	0.000	-0.150	-0.216	0.392	0.258	0.800
7	MZ	KOR	-0.374	-0.003	0.551	-0.010	-0.020	-0.016	-0.446	-0.105	0.283	0.080	0.800
8	MZ	MNG	0.000	-0.054	0.053	-0.001	0.000	0.000	-0.053	0.000	0.105	0.000	0.800
9	MZ	TWN	-0.162	-0.001	0.308	-0.001	0.000	-0.007	-0.209	-0.099	0.241	0.044	0.800
10	MZ	XEA	-0.035	-0.003	0.140	-0.007	-0.016	-0.001	-0.116	-0.023	0.116	0.023	0.800
11	MZ	BRN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.800
12	MZ	KHM	-0.677	0.000	0.862	0.000	-0.011	-0.010	-0.834	-0.028	0.668	0.115	0.800
13	MZ	IDN	-0.319	0.000	0.900	0.000	-0.011	-0.220	-0.843	-0.057	0.689	0.116	0.800
14	MZ	LAO	-0.577	0.000	0.853	0.000	-0.003	-0.017	-0.847	-0.006	0.678	0.116	0.800
15	MZ	MYS	-0.033	0.000	0.116	0.000	0.000	-0.136	-0.084	-0.032	0.062	0.011	0.800
16	MZ	PHL	-0.203	0.000	0.647	0.000	0.000	-0.148	-0.560	-0.087	0.628	0.055	0.800
17	MZ	SGP	0.000	0.000	0.412	0.000	0.000	0.000	-0.353	-0.059	0.294	0.059	0.800
18	MZ	THA	-0.454	0.000	0.651	-0.004	-0.001	-0.017	-0.498	-0.152	0.406	0.068	0.800
19	MZ	VNM	-0.571	0.000	0.923	0.000	-0.005	-0.012	-0.753	-0.170	0.602	0.104	0.800
20	MZ	XSE	-0.521	-0.002	0.847	-0.019	-0.007	-0.178	-0.844	-0.003	0.675	0.116	0.800
21	MZ	BGD	-0.338	-0.005	1.072	-0.001	-0.001	-0.006	-0.518	-0.554	0.441	0.212	0.800
22	MZ	IND	-0.105	-0.067	0.534	-0.038	-0.020	-0.066	-0.429	-0.105	0.367	0.176	0.800
23	MZ	NPL	-0.088	-0.038	0.329	-0.015	-0.001	-0.019	-0.328	-0.001	0.641	0.158	0.800
24	MZ	PAK	-0.044	-0.160	1.029	-0.009	0.000	-0.041	-0.321	-0.707	0.268	0.132	0.800
25	MZ	LKA	-0.263	0.000	0.787	-0.001	0.000	-0.072	-0.406	-0.382	0.338	0.164	0.800
26	MZ	XSA	-0.025	-0.386	0.636	-0.026	0.000	-0.009	-0.608	-0.028	0.518	0.249	0.800
27	MZ	CAN	0.000	-0.025	0.311	-0.008	-0.004	-0.023	-0.076	-0.235	0.180	0.204	0.800
28	MZ	USA	-0.001	-0.020	0.392	-0.004	-0.035	-0.006	-0.178	-0.215	0.025	0.216	0.800
29	MZ	MEX	-0.001	-0.010	0.356	-0.038	-0.002	-0.010	-0.286	-0.071	0.459	0.255	0.800
30	MZ	XNA	0.000	0.000	0.302	0.000	0.000	0.000	-0.098	-0.205	0.127	0.107	0.800
31	MZ	ARG	-0.001	-0.016	0.353	-0.009	-0.098	-0.010	-0.205	-0.148	0.140	0.183	0.800
32	MZ	BOL	-0.009	-0.008	0.237	-0.013	-0.078	-0.018	-0.207	-0.031	0.327	0.184	0.800
33	MZ	BRA	-0.004	-0.003	0.287	-0.001	-0.048	-0.003	-0.119	-0.169	0.169	0.445	0.800
34	MZ	CHL	-0.004	-0.054	0.406	-0.025	0.000	-0.006	-0.155	-0.251	0.242	0.139	0.800
35	MZ	COL	-0.056	-0.001	0.488	-0.002	-0.003	-0.028	-0.226	-0.262	0.155	0.202	0.800
36	MZ	ECU	-0.027	0.000	0.268	-0.002	-0.003	-0.014	-0.121	-0.146	0.130	0.108	0.800
37	MZ	PRY	-0.003	-0.022	0.431	-0.001	-0.141	-0.012	-0.312	-0.119	0.244	0.279	0.800
38	MZ	PER	-0.071	-0.024	0.423	-0.035	0.000	-0.015	-0.357	-0.066	0.577	0.051	0.800
39	MZ	URY	-0.004	-0.011	0.339	-0.003	-0.022	0.000	-0.066	-0.273	0.083	0.058	0.800
40	MZ	VEN	-0.022	0.000	0.390	-0.019	-0.004	-0.021	-0.212	-0.178	0.340	0.189	0.800
41	MZ	XSM	-0.244	0.000	0.391	0.000	0.000	-0.012	-0.229	-0.162	0.337	0.205	0.800
42	MZ	CRI	-0.070	0.000	0.348	0.000	0.000	-0.059	-0.116	-0.232	0.130	0.101	0.800
43	MZ	GTM	-0.001	0.000	0.399	-0.004	-0.002	-0.015	-0.243	-0.156	0.363	0.217	0.800
44	MZ	HND	-0.002	0.000	0.257	-0.007	0.000	-0.031	-0.154	-0.103	0.249	0.137	0.800
45	MZ	NIC	-0.029	0.000	0.417	-0.012	-0.001	-0.013	-0.260	-0.157	0.280	0.232	0.800
46	MZ	PAN	-0.097	0.000	0.215	-0.001	0.000	-0.008	-0.208	-0.007	0.332	0.186	0.800
47	MZ	SLV	-0.002	0.000	0.419	-0.043	-0.001	-0.004	-0.247	-0.173	0.388	0.220	0.800
48	MZ	BLZ	-0.010	0.000	0.313	-0.013	-0.001	-0.001	-0.115	-0.198	0.177	0.104	0.800
49	MZ	DOM	-0.035	0.000	0.275	0.000	0.000	-0.008	-0.047	-0.229	0.062	0.043	0.800
50	MZ	JAM	0.000	0.000	0.096	0.000	0.000	-0.090	-0.095	-0.001	0.444	0.182	0.800
51	MZ	PRI	0.000	0.000	0.326	0.000	0.000	-0.108	-0.206	-0.121	0.261	0.184	0.800
52	MZ	TTO	-0.103	0.000	0.500	0.000	0.000	-0.177	-0.500	0.000	0.500	0.500	0.800
53	MZ	XCB	-0.043	0.000	0.347	-0.020	0.000	-0.015	-0.260	-0.087	0.330	0.232	0.800
54	MZ	AUT	0.000	-0.018	0.298	-0.020	-0.002	-0.006	-0.080	-0.218	0.458	0.154	0.800
55	MZ	BEL	0.000	-0.044	0.852	-0.008	0.000	-0.003	-0.090	-0.762	0.415	0.172	0.800
56	MZ	CYP	0.000	-0.017	0.249	-0.104	0.000	-0.024	-0.104	-0.145	0.534	0.301	0.800
57	MZ	CZE	0.000	-0.134	0.491	-0.072	-0.001	-0.070	-0.337	-0.154	0.295	0.115	0.800
58	MZ	DNK	0.000	-0.034	0.183	-0.038	0.000	-0.006	-0.079	-0.104	0.179	0.284	0.800
59	MZ	EST	0.000	-0.066	0.303	-0.095	0.000	-0.045	-0.201	-0.101	0.281	0.087	0.800
60	MZ	FIN	0.000	-0.011	0.108	-0.042	0.000	-0.004	-0.042	-0.066	0.213	0.081	0.800
61	MZ	FRA	0.000	-0.028	0.307	-0.009	0.000	-0.009	-0.069	-0.237	0.371	0.131	0.800
62	MZ	DEU	0.000	-0.038	0.158	-0.032	0.000	-0.014	-0.100	-0.058	0.251	0.113	0.800
63	MZ	GRC	-0.001	-0.021	0.205	-0.006	0.000	-0.053	-0.090	-0.115	0.553	0.173	0.800
64	MZ	HUN	0.000	-0.058	0.375	-0.025	-0.002	-0.046	-0.273	-0.102	0.271	0.094	0.800
65	MZ	IRL	0.000	-0.029	0.334	-0.096	0.000	-0.003	-0.096	-0.238	0.018	0.183	0.800
66	MZ	ITA	-0.003	-0.029	0.171	-0.006	-0.002	-0.019	-0.106	-0.066	0.399	0.202	0.800
67	MZ	LVA	0.000	-0.129	0.386	-0.072	0.000	-0.037	-0.269	-0.117	0.482	0.115	0.800
68	MZ	LTU	0.000	-0.071	1.029	-0.080	0.000	-0.028	-0.234	-0.795	0.467	0.101	0.800
69	MZ	LUX	0.000	-0.045	0.212	-0.050	0.000	-0.012	-0.114	-0.098	0.508	0.220	0.800
70	MZ	MLT	0.000	-0.078	0.267	-0.009	0.000	0.000	-0.100	-0.167	0.500	0.167	0.800
71	MZ	NLD	0.000	-0.043	0.226	-0.007	0.000	-0.001	-0.061	-0.165	0.208	0.116	0.800
72	MZ	POL	0.000	-0.049	0.308	-0.105	0.000	-0.017	-0.162	-0.146	0.236	0.056	0.800

Table A-3-4. Elasticity of supply for other grains.

CNO	PID	CID	P_RI	P_WH	P_MZ	P_XG	P_SB	P_XS	AP	VP	L	K	A _{t-1}
Country No.	Prod. code	Country code	Price of RI	Price of WH	Price of MZ	Price of XG	Price of SB	Price of XS	Price of land	Price of chemic.	Labor input	Capital input	Area t-1
1	XG	AUS	0.000	-0.068	0.000	0.262	0.000	-0.008	-0.111	-0.151	0.098	0.148	0.800
2	XG	NZL	0.000	-0.022	-0.006	0.159	0.000	-0.001	-0.066	-0.093	0.107	0.114	0.800
3	XG	XOC	-0.001	0.000	-0.002	0.391	0.000	-0.287	-0.271	-0.120	0.084	0.062	0.800
4	XG	CHN	-0.034	-0.027	-0.037	0.358	-0.008	-0.022	-0.199	-0.159	0.325	0.082	0.800
5	XG	HKG	0.000	0.000	0.000	0.377	0.000	0.000	-0.208	-0.169	0.195	0.039	0.800
6	XG	JPN	-0.091	-0.009	0.000	0.366	-0.005	0.000	-0.150	-0.216	0.392	0.258	0.800
7	XG	KOR	-0.374	-0.003	-0.004	0.551	-0.020	-0.016	-0.446	-0.105	0.283	0.080	0.800
8	XG	MNG	0.000	-0.054	0.000	0.053	0.000	0.000	-0.053	0.000	0.105	0.000	0.800
9	XG	TWN	-0.162	-0.001	-0.007	0.308	0.000	-0.007	-0.209	-0.099	0.241	0.044	0.800
10	XG	XEA	-0.035	-0.003	-0.023	0.140	-0.016	-0.001	-0.116	-0.023	0.116	0.023	0.800
11	XG	BRN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.800
12	XG	KHM	-0.677	0.000	-0.027	0.862	-0.011	-0.010	-0.834	-0.028	0.668	0.115	0.800
13	XG	IDN	-0.319	0.000	-0.080	0.900	-0.011	-0.220	-0.843	-0.057	0.689	0.116	0.800
14	XG	LAO	-0.577	0.000	-0.088	0.853	-0.003	-0.017	-0.847	-0.006	0.678	0.116	0.800
15	XG	MYS	-0.033	0.000	0.000	0.116	0.000	-0.136	-0.084	-0.032	0.062	0.011	0.800
16	XG	PHL	-0.203	0.000	-0.093	0.647	0.000	-0.148	-0.560	-0.087	0.628	0.055	0.800
17	XG	SGP	0.000	0.000	0.000	0.412	0.000	0.000	-0.353	-0.059	0.294	0.059	0.800
18	XG	THA	-0.454	0.000	-0.022	0.651	-0.001	-0.017	-0.498	-0.152	0.406	0.068	0.800
19	XG	VNM	-0.571	0.000	-0.050	0.923	-0.005	-0.012	-0.753	-0.170	0.602	0.104	0.800
20	XG	XSE	-0.521	-0.002	-0.019	0.847	-0.007	-0.178	-0.844	-0.003	0.675	0.116	0.800
21	XG	BGD	-0.338	-0.005	-0.004	1.072	-0.001	-0.006	-0.518	-0.554	0.441	0.212	0.800
22	XG	IND	-0.105	-0.067	-0.017	0.534	-0.020	-0.066	-0.429	-0.105	0.367	0.176	0.800
23	XG	NPL	-0.088	-0.038	-0.047	0.329	-0.001	-0.019	-0.328	-0.001	0.641	0.158	0.800
24	XG	PAK	-0.044	-0.160	-0.012	1.029	0.000	-0.041	-0.321	-0.707	0.268	0.132	0.800
25	XG	LKA	-0.263	0.000	-0.009	0.787	0.000	-0.072	-0.406	-0.382	0.338	0.164	0.800
26	XG	XSA	-0.025	-0.386	-0.021	0.636	0.000	-0.009	-0.608	-0.028	0.518	0.249	0.800
27	XG	CAN	0.000	-0.025	-0.003	0.311	-0.004	-0.023	-0.076	-0.235	0.180	0.204	0.800
28	XG	USA	-0.001	-0.020	-0.042	0.392	-0.035	-0.006	-0.178	-0.215	0.025	0.216	0.800
29	XG	MEX	-0.001	-0.010	-0.173	0.356	-0.002	-0.010	-0.286	-0.071	0.459	0.255	0.800
30	XG	XNA	0.000	0.000	0.000	0.302	0.000	0.000	-0.098	-0.205	0.127	0.107	0.800
31	XG	ARG	-0.001	-0.016	-0.013	0.353	-0.098	-0.010	-0.205	-0.148	0.140	0.183	0.800
32	XG	BOL	-0.009	-0.008	-0.019	0.237	-0.078	-0.018	-0.207	-0.031	0.327	0.184	0.800
33	XG	BRA	-0.004	-0.003	-0.021	0.287	-0.048	-0.003	-0.119	-0.169	0.169	0.445	0.800
34	XG	CHL	-0.004	-0.054	-0.022	0.406	0.000	-0.006	-0.155	-0.251	0.242	0.139	0.800
35	XG	COL	-0.056	-0.001	-0.068	0.488	-0.003	-0.028	-0.226	-0.262	0.155	0.202	0.800
36	XG	ECU	-0.027	0.000	-0.038	0.268	-0.003	-0.014	-0.121	-0.146	0.130	0.108	0.800
37	XG	PRY	-0.003	-0.022	-0.034	0.431	-0.141	-0.012	-0.312	-0.119	0.244	0.279	0.800
38	XG	PER	-0.071	-0.024	-0.095	0.423	0.000	-0.015	-0.357	-0.066	0.577	0.051	0.800
39	XG	URY	-0.004	-0.011	-0.002	0.339	-0.022	0.000	-0.066	-0.273	0.083	0.058	0.800
40	XG	VEN	-0.022	0.000	-0.092	0.390	-0.004	-0.021	-0.212	-0.178	0.340	0.189	0.800
41	XG	XSM	-0.244	0.000	-0.002	0.391	0.000	-0.012	-0.229	-0.162	0.337	0.205	0.800
42	XG	CRI	-0.070	0.000	-0.005	0.348	0.000	-0.059	-0.116	-0.232	0.130	0.101	0.800
43	XG	GTM	-0.001	0.000	-0.198	0.399	-0.002	-0.015	-0.243	-0.156	0.363	0.217	0.800
44	XG	HND	-0.002	0.000	-0.101	0.257	0.000	-0.031	-0.154	-0.103	0.249	0.137	0.800
45	XG	NIC	-0.029	0.000	-0.139	0.417	-0.001	-0.013	-0.260	-0.157	0.280	0.232	0.800
46	XG	PAN	-0.097	0.000	-0.042	0.215	0.000	-0.008	-0.208	-0.007	0.332	0.186	0.800
47	XG	SLV	-0.002	0.000	-0.168	0.419	-0.001	-0.004	-0.247	-0.173	0.388	0.220	0.800
48	XG	BLZ	-0.010	0.000	-0.065	0.313	-0.001	-0.001	-0.115	-0.198	0.177	0.104	0.800
49	XG	DOM	-0.035	0.000	-0.003	0.275	0.000	-0.008	-0.047	-0.229	0.062	0.043	0.800
50	XG	JAM	0.000	0.000	-0.004	0.096	0.000	-0.090	-0.095	-0.001	0.444	0.182	0.800
51	XG	PRI	0.000	0.000	-0.102	0.326	0.000	-0.108	-0.206	-0.121	0.261	0.184	0.800
52	XG	TTO	-0.103	0.000	-0.081	0.500	0.000	-0.177	-0.500	0.000	0.500	0.500	0.800
53	XG	XCB	-0.043	0.000	-0.110	0.347	0.000	-0.015	-0.260	-0.087	0.330	0.232	0.800
54	XG	AUT	0.000	-0.018	-0.013	0.298	-0.002	-0.006	-0.080	-0.218	0.458	0.154	0.800
55	XG	BEL	0.000	-0.044	-0.011	0.852	0.000	-0.003	-0.090	-0.762	0.415	0.172	0.800
56	XG	CYP	0.000	-0.017	0.000	0.249	0.000	-0.024	-0.104	-0.145	0.534	0.301	0.800
57	XG	CZE	0.000	-0.134	-0.014	0.491	-0.001	-0.070	-0.337	-0.154	0.295	0.115	0.800
58	XG	DNK	0.000	-0.034	0.000	0.183	0.000	-0.006	-0.079	-0.104	0.179	0.284	0.800
59	XG	EST	0.000	-0.066	0.000	0.303	0.000	-0.045	-0.201	-0.101	0.281	0.087	0.800
60	XG	FIN	0.000	-0.011	0.000	0.108	0.000	-0.004	-0.042	-0.066	0.213	0.081	0.800
61	XG	FRA	0.000	-0.028	-0.006	0.307	0.000	-0.009	-0.069	-0.237	0.371	0.131	0.800
62	XG	DEU	0.000	-0.038	-0.004	0.158	0.000	-0.014	-0.100	-0.058	0.251	0.113	0.800
63	XG	GRC	-0.001	-0.021	-0.006	0.205	0.000	-0.053	-0.090	-0.115	0.553	0.173	0.800
64	XG	HUN	0.000	-0.058	-0.069	0.375	-0.002	-0.046	-0.273	-0.102	0.271	0.094	0.800
65	XG	IRL	0.000	-0.029	0.000	0.334	0.000	-0.003	-0.096	-0.238	0.018	0.183	0.800
66	XG	ITA	-0.003	-0.029	-0.014	0.171	-0.002	-0.019	-0.106	-0.066	0.399	0.202	0.800
67	XG	LVA	0.000	-0.129	0.000	0.386	0.000	-0.037	-0.269	-0.117	0.482	0.115	0.800
68	XG	LTU	0.000	-0.071	-0.001	1.029	0.000	-0.028	-0.234	-0.795	0.467	0.101	0.800
69	XG	LUX	0.000	-0.045	-0.001	0.212	0.000	-0.012	-0.114	-0.098	0.508	0.220	0.800
70	XG	MLT	0.000	-0.078	0.000	0.267	0.000	0.000	-0.100	-0.167	0.500	0.167	0.800
71	XG	NLD	0.000	-0.043	-0.003	0.226	0.000	-0.001	-0.061	-0.165	0.208	0.116	0.800
72	XG	POL	0.000	-0.049	-0.007	0.308	0.000	-0.017	-0.162	-0.146	0.236	0.056	0.800

Table A-3-5. Elasticity of supply for soybeans.

CNO	PID	CID	P_RI	P_WH	P_MZ	P_XG	P_SB	P_XS	AP	VP	L	K	A _{t-1}
Country No.	Prod. code	Country code	Price of RI	Price of WH	Price of MZ	Price of XG	Price of SB	Price of XS	Price of land	Price of chemic.	Labor input	Capital input	Area t-1
1	SB	AUS	0.000	-0.109	0.000	-0.032	0.216	-0.013	-0.170	-0.046	0.150	0.227	0.400
2	SB	NZL	0.000	-0.016	-0.004	-0.022	0.090	-0.001	-0.045	-0.045	0.067	0.079	0.400
3	SB	XOC	-0.002	0.000	-0.003	-0.001	0.474	-0.450	-0.450	-0.024	0.142	0.102	0.400
4	SB	CHN	-0.051	-0.041	-0.056	-0.005	0.490	-0.033	-0.328	-0.163	0.536	0.136	0.400
5	SB	HKG	0.000	0.000	0.000	0.000	0.467	0.000	-0.333	-0.133	0.333	0.067	0.400
6	SB	JPN	-0.089	-0.009	0.000	-0.004	0.246	0.000	-0.135	-0.111	0.351	0.232	0.400
7	SB	KOR	-0.504	-0.003	-0.005	-0.013	0.754	-0.022	-0.679	-0.075	0.431	0.120	0.400
8	SB	MNG	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.400
9	SB	TWN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.400
10	SB	XEA	-0.081	-0.006	-0.054	-0.016	0.475	-0.002	-0.350	-0.125	0.350	0.075	0.400
11	SB	BRN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.400
12	SB	KHM	-0.728	0.000	-0.029	0.000	0.961	-0.011	-0.944	-0.017	0.754	0.129	0.400
13	SB	IDN	-0.285	0.000	-0.072	0.000	0.788	-0.197	-0.710	-0.078	0.580	0.098	0.400
14	SB	LAO	-0.634	0.000	-0.096	0.000	1.018	-0.019	-1.014	-0.005	0.810	0.140	0.400
15	SB	MYS	-0.142	0.000	-0.001	0.000	0.792	-0.580	-0.580	-0.212	0.430	0.080	0.400
16	SB	PHL	-0.217	0.000	-0.100	0.000	0.678	-0.158	-0.610	-0.068	0.684	0.060	0.400
17	SB	SGP	0.000	0.000	0.000	0.000	0.600	0.000	-0.500	-0.100	0.400	0.100	0.400
18	SB	THA	-0.397	0.000	-0.019	-0.004	0.565	-0.015	-0.414	-0.152	0.337	0.057	0.400
19	SB	VNM	-0.333	0.000	-0.029	0.000	0.353	-0.007	-0.309	-0.044	0.248	0.042	0.400
20	SB	XSE	-0.570	-0.003	-0.021	-0.021	1.006	-0.196	-1.005	-0.001	0.804	0.138	0.400
21	SB	BGD	-0.200	-0.003	-0.002	0.000	0.411	-0.003	-0.209	-0.202	0.179	0.086	0.400
22	SB	IND	-0.116	-0.074	-0.019	-0.042	0.575	-0.072	-0.487	-0.088	0.417	0.199	0.400
23	SB	NPL	-0.072	-0.031	-0.038	-0.012	0.252	-0.016	-0.252	0.000	0.493	0.122	0.400
24	SB	PAK	-0.069	-0.251	-0.019	-0.014	0.910	-0.065	-0.474	-0.436	0.396	0.194	0.400
25	SB	LKA	-0.340	0.000	-0.011	-0.001	0.668	-0.093	-0.490	-0.178	0.411	0.199	0.400
26	SB	XSA	-0.025	-0.381	-0.020	-0.025	0.617	-0.009	-0.592	-0.025	0.505	0.243	0.400
27	SB	CAN	0.000	-0.033	-0.004	-0.011	0.336	-0.031	-0.102	-0.234	0.242	0.274	0.400
28	SB	USA	-0.001	-0.023	-0.049	-0.004	0.330	-0.007	-0.200	-0.130	0.028	0.243	0.400
29	SB	MEX	-0.001	-0.011	-0.180	-0.040	0.387	-0.011	-0.304	-0.083	0.489	0.271	0.400
30	SB	XNA	0.000	0.000	0.000	0.000	0.338	0.000	-0.125	-0.213	0.163	0.138	0.400
31	SB	ARG	-0.001	-0.016	-0.014	-0.009	0.387	-0.011	-0.219	-0.168	0.150	0.196	0.400
32	SB	BOL	-0.008	-0.007	-0.018	-0.012	0.274	-0.018	-0.205	-0.069	0.325	0.183	0.400
33	SB	BRA	-0.004	-0.003	-0.023	-0.002	0.369	-0.003	-0.137	-0.232	0.195	0.514	0.400
34	SB	CHL	-0.003	-0.034	-0.014	-0.016	0.184	-0.004	-0.082	-0.102	0.128	0.073	0.400
35	SB	COL	-0.086	-0.001	-0.105	-0.003	0.460	-0.043	-0.344	-0.116	0.236	0.307	0.400
36	SB	ECU	-0.031	0.000	-0.044	-0.002	0.186	-0.015	-0.130	-0.056	0.139	0.117	0.400
37	SB	PRY	-0.003	-0.021	-0.032	-0.001	0.439	-0.011	-0.302	-0.138	0.236	0.269	0.400
38	SB	PER	-0.074	-0.025	-0.100	-0.036	0.431	-0.015	-0.379	-0.052	0.612	0.054	0.400
39	SB	URY	-0.006	-0.020	-0.003	-0.006	0.322	-0.001	-0.114	-0.207	0.145	0.102	0.400
40	SB	VEN	-0.023	0.000	-0.098	-0.021	0.353	-0.022	-0.221	-0.132	0.355	0.198	0.400
41	SB	XSM	-0.283	0.000	-0.002	0.000	0.427	-0.014	-0.274	-0.154	0.402	0.239	0.400
42	SB	CRI	-0.132	0.000	-0.009	0.000	0.624	-0.112	-0.264	-0.360	0.296	0.235	0.400
43	SB	GTM	-0.002	0.000	-0.230	-0.004	0.355	-0.018	-0.274	-0.082	0.409	0.244	0.400
44	SB	HND	-0.003	0.000	-0.163	-0.011	0.590	-0.050	-0.314	-0.276	0.508	0.280	0.400
45	SB	NIC	-0.021	0.000	-0.101	-0.009	0.281	-0.009	-0.170	-0.110	0.184	0.152	0.400
46	SB	PAN	-0.071	0.000	-0.031	-0.001	0.520	-0.006	-0.190	-0.330	0.310	0.170	0.400
47	SB	SLV	-0.001	0.000	-0.110	-0.028	0.154	-0.003	-0.131	-0.023	0.206	0.117	0.400
48	SB	BLZ	-0.008	0.000	-0.053	-0.011	0.167	-0.001	-0.083	-0.083	0.167	0.083	0.400
49	SB	DOM	-0.172	0.000	-0.012	-0.001	0.545	-0.039	-0.273	-0.273	0.364	0.273	0.400
50	SB	JAM	0.000	0.000	-0.002	0.000	0.037	-0.037	-0.037	0.000	0.172	0.067	0.400
51	SB	PRI	0.000	0.000	-0.118	0.000	0.374	-0.125	-0.247	-0.127	0.314	0.220	0.400
52	SB	TTO	-0.103	0.000	-0.081	0.000	0.500	-0.177	-0.500	0.000	0.500	0.500	0.400
53	SB	XCB	-0.039	0.000	-0.101	-0.018	0.312	-0.014	-0.232	-0.080	0.294	0.207	0.400
54	SB	AUT	0.000	-0.019	-0.014	-0.021	0.293	-0.006	-0.084	-0.209	0.476	0.159	0.400
55	SB	BEL	0.000	-0.049	-0.012	-0.009	0.473	-0.003	-0.080	-0.394	0.368	0.152	0.400
56	SB	CYP	0.000	-0.020	0.000	-0.124	0.133	-0.029	-0.112	-0.020	0.602	0.337	0.400
57	SB	CZE	0.000	-0.093	-0.010	-0.050	0.604	-0.048	-0.251	-0.352	0.220	0.086	0.400
58	SB	DNK	0.000	-0.032	0.000	-0.037	0.300	-0.006	-0.082	-0.218	0.188	0.298	0.400
59	SB	EST	0.000	-0.078	0.000	-0.112	0.309	-0.054	-0.239	-0.070	0.333	0.103	0.400
60	SB	FIN	0.000	-0.011	0.000	-0.040	0.401	-0.004	-0.050	-0.351	0.252	0.095	0.400
61	SB	FRA	0.000	-0.030	-0.007	-0.010	0.296	-0.010	-0.074	-0.222	0.398	0.140	0.400
62	SB	DEU	0.000	-0.035	-0.004	-0.030	0.211	-0.013	-0.096	-0.115	0.242	0.109	0.400
63	SB	GRC	-0.001	-0.018	-0.005	-0.006	0.085	-0.047	-0.072	-0.012	0.441	0.138	0.400
64	SB	HUN	0.000	-0.055	-0.066	-0.024	0.414	-0.044	-0.266	-0.148	0.263	0.091	0.400
65	SB	IRL	0.000	-0.041	0.000	-0.136	0.144	-0.004	-0.117	-0.028	0.022	0.222	0.400
66	SB	ITA	-0.003	-0.025	-0.012	-0.005	0.122	-0.016	-0.087	-0.034	0.329	0.167	0.400
67	SB	LVA	0.000	-0.088	0.000	-0.050	0.378	-0.026	-0.184	-0.194	0.331	0.078	0.400
68	SB	LTU	0.000	-0.098	-0.002	-0.111	0.538	-0.039	-0.245	-0.293	0.489	0.105	0.400
69	SB	LUX	0.000	-0.021	0.000	-0.023	0.123	-0.005	-0.048	-0.075	0.219	0.096	0.400
70	SB	MLT	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.400
71	SB	NLD	0.000	-0.067	-0.004	-0.011	0.154	-0.001	-0.089	-0.065	0.302	0.169	0.400
72	SB	POL	0.000	-0.069	-0.009	-0.148	0.441	-0.023	-0.250	-0.191	0.365	0.086	0.400

Table A-3-6. Elasticity of supply for other oil crops.

CNO	PID	CID	P_RI	P_WH	P_MZ	P_XG	P_SB	P_XS	AP	VP	L	K	A _{t-1}
Country No.	Prod. code	Country code	Price of RI	Price of WH	Price of MZ	Price of XG	Price of SB	Price of XS	Price of land	Price of chemic.	Labor input	Capital input	Area t-1
1	XS	AUS	0.000	-0.109	0.000	-0.032	0.000	0.216	-0.170	-0.046	0.150	0.227	0.400
2	XS	NZL	0.000	-0.016	-0.004	-0.022	0.000	0.090	-0.045	-0.045	0.067	0.079	0.400
3	XS	XOC	-0.002	0.000	-0.003	-0.001	0.000	0.474	-0.450	-0.024	0.142	0.102	0.400
4	XS	CHN	-0.051	-0.041	-0.056	-0.005	-0.012	0.490	-0.328	-0.163	0.536	0.136	0.400
5	XS	HKG	0.000	0.000	0.000	0.000	0.000	0.467	-0.333	-0.133	0.333	0.067	0.400
6	XS	JPN	-0.089	-0.009	0.000	-0.004	-0.005	0.246	-0.135	-0.111	0.351	0.232	0.400
7	XS	KOR	-0.504	-0.003	-0.005	-0.013	-0.026	0.754	-0.679	-0.075	0.431	0.120	0.400
8	XS	MNG	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.400
9	XS	TWN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.400
10	XS	XEA	-0.081	-0.006	-0.054	-0.016	-0.038	0.475	-0.350	-0.125	0.350	0.075	0.400
11	XS	BRN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.400
12	XS	KHM	-0.728	0.000	-0.029	0.000	-0.012	0.961	-0.944	-0.017	0.754	0.129	0.400
13	XS	IDN	-0.285	0.000	-0.072	0.000	-0.010	0.788	-0.710	-0.078	0.580	0.098	0.400
14	XS	LAO	-0.634	0.000	-0.096	0.000	-0.003	1.018	-1.014	-0.005	0.810	0.140	0.400
15	XS	MYS	-0.142	0.000	-0.001	0.000	0.000	0.792	-0.580	-0.212	0.430	0.080	0.400
16	XS	PHL	-0.217	0.000	-0.100	0.000	0.000	0.678	-0.610	-0.068	0.684	0.060	0.400
17	XS	SGP	0.000	0.000	0.000	0.000	0.000	0.600	-0.500	-0.100	0.400	0.100	0.400
18	XS	THA	-0.397	0.000	-0.019	-0.004	-0.001	0.565	-0.414	-0.152	0.337	0.057	0.400
19	XS	VNM	-0.333	0.000	-0.029	0.000	-0.003	0.353	-0.309	-0.044	0.248	0.042	0.400
20	XS	XSE	-0.570	-0.003	-0.021	-0.021	-0.008	1.006	-1.005	-0.001	0.804	0.138	0.400
21	XS	BGD	-0.200	-0.003	-0.002	0.000	0.000	0.411	-0.209	-0.202	0.179	0.086	0.400
22	XS	IND	-0.116	-0.074	-0.019	-0.042	-0.022	0.575	-0.487	-0.088	0.417	0.199	0.400
23	XS	NPL	-0.072	-0.031	-0.038	-0.012	-0.001	0.252	-0.252	0.000	0.493	0.122	0.400
24	XS	PAK	-0.069	-0.251	-0.019	-0.014	0.000	0.910	-0.474	-0.436	0.396	0.194	0.400
25	XS	LKA	-0.340	0.000	-0.011	-0.001	-0.001	0.668	-0.490	-0.178	0.411	0.199	0.400
26	XS	XSA	-0.025	-0.381	-0.020	-0.025	0.000	0.617	-0.592	-0.025	0.505	0.243	0.400
27	XS	CAN	0.000	-0.033	-0.004	-0.011	-0.005	0.336	-0.102	-0.234	0.242	0.274	0.400
28	XS	USA	-0.001	-0.023	-0.049	-0.004	-0.041	0.330	-0.200	-0.130	0.028	0.243	0.400
29	XS	MEX	-0.001	-0.011	-0.180	-0.040	-0.003	0.387	-0.304	-0.083	0.489	0.271	0.400
30	XS	XNA	0.000	0.000	0.000	0.000	0.000	0.338	-0.125	-0.213	0.163	0.138	0.400
31	XS	ARG	-0.001	-0.016	-0.014	-0.009	-0.102	0.387	-0.219	-0.168	0.150	0.196	0.400
32	XS	BOL	-0.008	-0.007	-0.018	-0.012	-0.076	0.274	-0.205	-0.069	0.325	0.183	0.400
33	XS	BRA	-0.004	-0.003	-0.023	-0.002	-0.052	0.369	-0.137	-0.232	0.195	0.514	0.400
34	XS	CHL	-0.003	-0.034	-0.014	-0.016	0.000	0.184	-0.082	-0.102	0.128	0.073	0.400
35	XS	COL	-0.086	-0.001	-0.105	-0.003	-0.004	0.460	-0.344	-0.116	0.236	0.307	0.400
36	XS	ECU	-0.031	0.000	-0.044	-0.002	-0.003	0.186	-0.130	-0.056	0.139	0.117	0.400
37	XS	PRY	-0.003	-0.021	-0.032	-0.001	-0.136	0.439	-0.302	-0.138	0.236	0.269	0.400
38	XS	PER	-0.074	-0.025	-0.100	-0.036	0.000	0.431	-0.379	-0.052	0.612	0.054	0.400
39	XS	URY	-0.006	-0.020	-0.003	-0.006	-0.038	0.322	-0.114	-0.207	0.145	0.102	0.400
40	XS	VEN	-0.023	0.000	-0.098	-0.021	-0.004	0.353	-0.221	-0.132	0.355	0.198	0.400
41	XS	XSM	-0.283	0.000	-0.002	0.000	0.000	0.427	-0.274	-0.154	0.402	0.239	0.400
42	XS	CRI	-0.132	0.000	-0.009	0.000	0.000	0.624	-0.264	-0.360	0.296	0.235	0.400
43	XS	GTM	-0.002	0.000	-0.230	-0.004	-0.002	0.355	-0.274	-0.082	0.409	0.244	0.400
44	XS	HND	-0.003	0.000	-0.163	-0.011	0.000	0.590	-0.314	-0.276	0.508	0.280	0.400
45	XS	NIC	-0.021	0.000	-0.101	-0.009	0.000	0.281	-0.170	-0.110	0.184	0.152	0.400
46	XS	PAN	-0.071	0.000	-0.031	-0.001	0.000	0.520	-0.190	-0.330	0.310	0.170	0.400
47	XS	SLV	-0.001	0.000	-0.110	-0.028	0.000	0.154	-0.131	-0.023	0.206	0.117	0.400
48	XS	BLZ	-0.008	0.000	-0.053	-0.011	-0.001	0.167	-0.083	-0.083	0.167	0.083	0.400
49	XS	DOM	-0.172	0.000	-0.012	-0.001	0.000	0.545	-0.273	-0.273	0.364	0.273	0.400
50	XS	JAM	0.000	0.000	-0.002	0.000	0.000	0.037	-0.037	0.000	0.172	0.067	0.400
51	XS	PRI	0.000	0.000	-0.118	0.000	0.000	0.374	-0.247	-0.127	0.314	0.220	0.400
52	XS	TTO	-0.103	0.000	-0.081	0.000	0.000	0.500	-0.500	0.000	0.500	0.500	0.400
53	XS	XCB	-0.039	0.000	-0.101	-0.018	0.000	0.312	-0.232	-0.080	0.294	0.207	0.400
54	XS	AUT	0.000	-0.019	-0.014	-0.021	-0.002	0.293	-0.084	-0.209	0.476	0.159	0.400
55	XS	BEL	0.000	-0.049	-0.012	-0.009	0.000	0.473	-0.080	-0.394	0.368	0.152	0.400
56	XS	CYP	0.000	-0.020	0.000	-0.124	0.000	0.133	-0.112	-0.020	0.602	0.337	0.400
57	XS	CZE	0.000	-0.093	-0.010	-0.050	-0.001	0.604	-0.251	-0.352	0.220	0.086	0.400
58	XS	DNK	0.000	-0.032	0.000	-0.037	0.000	0.300	-0.082	-0.218	0.188	0.298	0.400
59	XS	EST	0.000	-0.078	0.000	-0.112	0.000	0.309	-0.239	-0.070	0.333	0.103	0.400
60	XS	FIN	0.000	-0.011	0.000	-0.040	0.000	0.401	-0.050	-0.351	0.252	0.095	0.400
61	XS	FRA	0.000	-0.030	-0.007	-0.010	0.000	0.296	-0.074	-0.222	0.398	0.140	0.400
62	XS	DEU	0.000	-0.035	-0.004	-0.030	0.000	0.211	-0.096	-0.115	0.242	0.109	0.400
63	XS	GRC	-0.001	-0.018	-0.005	-0.006	0.000	0.085	-0.072	-0.012	0.441	0.138	0.400
64	XS	HUN	0.000	-0.055	-0.066	-0.024	-0.002	0.414	-0.266	-0.148	0.263	0.091	0.400
65	XS	IRL	0.000	-0.041	0.000	-0.136	0.000	0.144	-0.117	-0.028	0.022	0.222	0.400
66	XS	ITA	-0.003	-0.025	-0.012	-0.005	-0.002	0.122	-0.087	-0.034	0.329	0.167	0.400
67	XS	LVA	0.000	-0.088	0.000	-0.050	0.000	0.378	-0.184	-0.194	0.331	0.078	0.400
68	XS	LTU	0.000	-0.098	-0.002	-0.111	0.000	0.538	-0.245	-0.293	0.489	0.105	0.400
69	XS	LUX	0.000	-0.021	0.000	-0.023	0.000	0.123	-0.048	-0.075	0.219	0.096	0.400
70	XS	MLT	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.400
71	XS	NLD	0.000	-0.067	-0.004	-0.011	0.000	0.154	-0.089	-0.065	0.302	0.169	0.400
72	XS	POL	0.000	-0.069	-0.009	-0.148	0.000	0.441	-0.250	-0.191	0.365	0.086	0.400

Table A-3-7. Elasticity of supply for soybean oil, other vegetable oils, oil cake, and other cakes.

CNO	PID	CID	P_OS-CX	P_SB_XS	L	K	Q_OS _{t+1} -CX _{t+1}
Country No.	Prod. code	Country code	Price of OS-CX	Price of SB_XS	Labor input	Capital input	Prod. <i>t</i> -1
1	OS, OX, CS, CX	AUS	0.003	-0.003	0.056	0.098	0.800
2	OS, OX, CS, CX	NZL	0.028	-0.028	0.025	0.009	0.800
3	OS, OX, CS, CX	XOC	0.033	-0.033	0.026	0.018	0.800
4	OS, OX, CS, CX	CHN	0.614	-0.614	0.074	0.101	0.800
5	OS, OX, CS, CX	HKG	0.020	-0.020	0.000	0.000	0.800
6	OS, OX, CS, CX	JPN	0.885	-0.885	0.099	0.085	0.800
7	OS, OX, CS, CX	KOR	0.684	-0.684	0.021	0.064	0.800
8	OS, OX, CS, CX	MNG	0.000	0.000	0.000	0.000	0.800
9	OS, OX, CS, CX	TWN	0.614	-0.614	0.074	0.101	0.800
10	OS, OX, CS, CX	XEA	0.498	-0.498	0.088	0.075	0.800
11	OS, OX, CS, CX	BRN	0.000	0.000	0.000	0.000	0.800
12	OS, OX, CS, CX	KHM	0.418	-0.418	0.090	0.371	0.800
13	OS, OX, CS, CX	IDN	0.408	-0.408	0.267	0.235	0.800
14	OS, OX, CS, CX	LAO	0.571	-0.571	0.086	0.100	0.800
15	OS, OX, CS, CX	MYS	0.488	-0.488	0.023	0.106	0.800
16	OS, OX, CS, CX	PHL	0.287	-0.287	0.034	0.304	0.800
17	OS, OX, CS, CX	SGP	0.004	-0.004	0.048	0.070	0.800
18	OS, OX, CS, CX	THA	0.786	-0.786	0.274	0.332	0.800
19	OS, OX, CS, CX	VNM	0.786	-0.786	0.274	0.332	0.800
20	OS, OX, CS, CX	XSE	0.482	-0.482	0.077	0.094	0.800
21	OS, OX, CS, CX	BGD	0.693	-0.693	0.027	0.134	0.800
22	OS, OX, CS, CX	IND	0.821	-0.821	0.065	0.206	0.800
23	OS, OX, CS, CX	NPL	0.726	-0.726	0.024	0.051	0.800
24	OS, OX, CS, CX	PAK	0.089	-0.089	0.030	0.055	0.800
25	OS, OX, CS, CX	LKA	0.155	-0.155	0.100	0.486	0.800
26	OS, OX, CS, CX	XSA	0.249	-0.249	0.025	0.058	0.800
27	OS, OX, CS, CX	CAN	0.445	-0.445	0.061	0.210	0.800
28	OS, OX, CS, CX	USA	0.691	-0.691	0.090	0.062	0.800
29	OS, OX, CS, CX	MEX	0.691	-0.691	0.090	0.062	0.800
30	OS, OX, CS, CX	XNA	0.408	-0.408	0.064	0.185	0.800
31	OS, OX, CS, CX	ARG	0.568	-0.568	0.134	0.134	0.800
32	OS, OX, CS, CX	BOL	0.568	-0.568	0.134	0.134	0.800
33	OS, OX, CS, CX	BRA	0.568	-0.568	0.134	0.134	0.800
34	OS, OX, CS, CX	CHL	0.023	-0.023	0.070	0.159	0.800
35	OS, OX, CS, CX	COL	0.282	-0.282	0.085	0.165	0.800
36	OS, OX, CS, CX	ECU	0.032	-0.032	0.044	0.097	0.800
37	OS, OX, CS, CX	PRY	0.403	-0.403	0.019	0.087	0.800
38	OS, OX, CS, CX	PER	0.133	-0.133	0.123	0.177	0.800
39	OS, OX, CS, CX	URY	0.421	-0.421	0.110	0.162	0.800
40	OS, OX, CS, CX	VEN	0.137	-0.137	0.091	0.170	0.800
41	OS, OX, CS, CX	XSM	0.034	-0.034	0.181	0.224	0.800
42	OS, OX, CS, CX	CRI	0.028	-0.028	0.074	0.124	0.800
43	OS, OX, CS, CX	GTM	0.161	-0.161	0.177	0.252	0.800
44	OS, OX, CS, CX	HND	0.500	-0.500	0.077	0.216	0.800
45	OS, OX, CS, CX	NIC	0.564	-0.564	0.052	0.076	0.800
46	OS, OX, CS, CX	PAN	0.105	-0.105	0.005	0.036	0.800
47	OS, OX, CS, CX	SLV	0.634	-0.634	0.051	0.137	0.800
48	OS, OX, CS, CX	BLZ	0.026	-0.026	0.040	0.086	0.800
49	OS, OX, CS, CX	DOM	0.022	-0.022	0.130	0.359	0.800
50	OS, OX, CS, CX	JAM	0.096	-0.096	0.040	0.040	0.800
51	OS, OX, CS, CX	PRI	0.333	-0.333	0.232	0.020	0.800
52	OS, OX, CS, CX	TTO	0.003	-0.003	0.264	0.329	0.800
53	OS, OX, CS, CX	XCB	0.156	-0.156	0.124	0.185	0.800
54	OS, OX, CS, CX	AUT	0.751	-0.751	0.448	0.013	0.800
55	OS, OX, CS, CX	BEL	0.726	-0.726	0.277	0.114	0.800
56	OS, OX, CS, CX	CYP	0.008	-0.008	0.076	0.144	0.800
57	OS, OX, CS, CX	CZE	0.850	-0.850	0.086	0.485	0.800
58	OS, OX, CS, CX	DNK	0.414	-0.414	0.066	0.071	0.800
59	OS, OX, CS, CX	EST	0.108	-0.108	0.563	0.059	0.800
60	OS, OX, CS, CX	FIN	0.748	-0.748	0.071	0.057	0.800
61	OS, OX, CS, CX	FRA	0.726	-0.726	0.277	0.114	0.800
62	OS, OX, CS, CX	DEU	0.414	-0.414	0.066	0.071	0.800
63	OS, OX, CS, CX	GRC	0.205	-0.205	0.114	0.187	0.800
64	OS, OX, CS, CX	HUN	0.751	-0.751	0.448	0.013	0.800
65	OS, OX, CS, CX	IRL	0.075	-0.075	0.054	0.110	0.800
66	OS, OX, CS, CX	ITA	0.233	-0.233	0.105	0.224	0.800
67	OS, OX, CS, CX	LVA	0.033	-0.033	0.104	0.154	0.800
68	OS, OX, CS, CX	LTU	0.010	-0.010	0.077	0.115	0.800
69	OS, OX, CS, CX	LUX	0.371	-0.371	0.007	0.489	0.800
70	OS, OX, CS, CX	MLT	0.000	0.000	0.074	0.074	0.800
71	OS, OX, CS, CX	NLD	0.726	-0.726	0.277	0.114	0.800
72	OS, OX, CS, CX	POL	0.370	-0.370	0.542	0.037	0.800

Table A-3-7. Elasticity of supply for soybean oil, other vegetable oils, oil cake, and other cakes (continued).

CNO	PID	CID	P_OS-CX	P_SB_XS	L	K	Q_OS _{t+1} -CX _{t+1}
Country No.	Prod. code	Country code	Price of OS-CX	Price of SB_XS	Labor input	Capital input	Prod. <i>t</i> -1
73	OS, OX, CS, CX	PRT	0.934	-0.934	0.138	0.179	0.800
74	OS, OX, CS, CX	SVK	0.790	-0.790	0.440	0.043	0.800
75	OS, OX, CS, CX	SVN	0.043	-0.043	0.361	0.056	0.800
76	OS, OX, CS, CX	ESP	0.934	-0.934	0.138	0.179	0.800
77	OS, OX, CS, CX	SWE	0.347	-0.347	0.088	0.114	0.800
78	OS, OX, CS, CX	GBR	0.075	-0.075	0.054	0.110	0.800
79	OS, OX, CS, CX	CHE	0.098	-0.098	0.057	0.037	0.800
80	OS, OX, CS, CX	NOR	0.709	-0.709	0.031	0.020	0.800
81	OS, OX, CS, CX	XEF	0.261	-0.261	0.051	0.289	0.800
82	OS, OX, CS, CX	ALB	0.685	-0.685	0.068	0.178	0.800
83	OS, OX, CS, CX	BGR	0.150	-0.150	0.519	0.112	0.800
84	OS, OX, CS, CX	BLR	0.327	-0.327	0.096	0.064	0.800
85	OS, OX, CS, CX	HRV	0.275	-0.275	0.098	0.069	0.800
86	OS, OX, CS, CX	ROU	0.266	-0.266	0.099	0.437	0.800
87	OS, OX, CS, CX	RUS	0.236	-0.236	0.096	0.177	0.800
88	OS, OX, CS, CX	UKR	0.327	-0.327	0.096	0.064	0.800
89	OS, OX, CS, CX	XEE	0.319	-0.319	0.090	0.058	0.800
90	OS, OX, CS, CX	XER	0.292	-0.292	0.123	0.133	0.800
91	OS, OX, CS, CX	KAZ	0.077	-0.077	0.134	0.124	0.800
92	OS, OX, CS, CX	KGZ	0.917	-0.917	0.083	0.083	0.800
93	OS, OX, CS, CX	XSU	0.375	-0.375	0.085	0.096	0.800
94	OS, OX, CS, CX	ARM	0.000	0.000	0.065	0.023	0.800
95	OS, OX, CS, CX	AZE	0.158	-0.158	0.105	0.053	0.800
96	OS, OX, CS, CX	GEO	0.158	-0.158	0.105	0.053	0.800
97	OS, OX, CS, CX	BHR	0.028	-0.028	0.035	0.035	0.800
98	OS, OX, CS, CX	IRN	0.193	-0.193	0.033	0.105	0.800
99	OS, OX, CS, CX	ISR	0.029	-0.029	0.163	0.059	0.800
100	OS, OX, CS, CX	KWT	0.092	-0.092	0.100	0.217	0.800
101	OS, OX, CS, CX	JOR	0.242	-0.242	0.000	0.000	0.800
102	OS, OX, CS, CX	OMN	0.012	-0.012	0.061	0.081	0.800
103	OS, OX, CS, CX	QAT	0.003	-0.003	0.029	0.029	0.800
104	OS, OX, CS, CX	SAU	0.570	-0.570	0.216	0.078	0.800
105	OS, OX, CS, CX	TUR	0.133	-0.133	0.051	0.215	0.800
106	OS, OX, CS, CX	ARE	0.664	-0.664	0.155	0.204	0.800
107	OS, OX, CS, CX	XWS	0.853	-0.853	0.045	0.175	0.800
108	OS, OX, CS, CX	EGY	0.242	-0.242	0.000	0.000	0.800
109	OS, OX, CS, CX	MAR	0.137	-0.137	0.066	0.064	0.800
110	OS, OX, CS, CX	TUN	0.314	-0.314	0.044	0.099	0.800
111	OS, OX, CS, CX	XNF	0.134	-0.134	0.047	0.101	0.800
112	OS, OX, CS, CX	BEN	0.047	-0.047	0.162	0.012	0.800
113	OS, OX, CS, CX	BFA	0.430	-0.430	0.068	0.182	0.800
114	OS, OX, CS, CX	CMR	0.036	-0.036	0.102	0.166	0.800
115	OS, OX, CS, CX	CIV	0.198	-0.198	0.055	0.022	0.800
116	OS, OX, CS, CX	GHA	0.001	-0.001	0.325	0.170	0.800
117	OS, OX, CS, CX	GIN	0.000	0.000	0.467	0.133	0.800
118	OS, OX, CS, CX	NGA	0.036	-0.036	0.102	0.166	0.800
119	OS, OX, CS, CX	SEN	0.371	-0.371	0.026	0.015	0.800
120	OS, OX, CS, CX	TGO	0.047	-0.047	0.162	0.012	0.800
121	OS, OX, CS, CX	XWF	0.227	-0.227	0.169	0.046	0.800
122	OS, OX, CS, CX	XCF	0.391	-0.391	0.059	0.036	0.800
123	OS, OX, CS, CX	XAC	0.046	-0.046	0.019	0.061	0.800
124	OS, OX, CS, CX	ETH	0.027	-0.027	0.128	0.220	0.800
125	OS, OX, CS, CX	KEN	0.027	-0.027	0.128	0.220	0.800
126	OS, OX, CS, CX	MDG	0.003	-0.003	0.138	0.149	0.800
127	OS, OX, CS, CX	MWI	0.000	0.000	0.048	0.119	0.800
128	OS, OX, CS, CX	MUS	0.036	-0.036	0.013	0.004	0.800
129	OS, OX, CS, CX	MOZ	0.044	-0.044	0.324	0.184	0.800
130	OS, OX, CS, CX	RWA	0.369	-0.369	0.149	0.498	0.800
131	OS, OX, CS, CX	TZA	0.041	-0.041	0.170	0.373	0.800
132	OS, OX, CS, CX	UGA	0.280	-0.280	0.118	0.049	0.800
133	OS, OX, CS, CX	ZMB	0.295	-0.295	0.072	0.198	0.800
134	OS, OX, CS, CX	ZWE	0.094	-0.094	0.051	0.331	0.800
135	OS, OX, CS, CX	XEC	0.286	-0.286	0.101	0.074	0.800
136	OS, OX, CS, CX	BWA	0.000	0.000	1.000	0.000	0.800
137	OS, OX, CS, CX	NAM	0.046	-0.046	0.000	0.000	0.800
138	OS, OX, CS, CX	ZAF	0.143	-0.143	0.050	0.099	0.800
139	OS, OX, CS, CX	XSC	0.059	-0.059	0.098	0.173	0.800
140	OS, OX, CS, CX	XTW	0.250	-0.250	0.000	0.000	0.800

Table A-3-8. Elasticity of input demand for soybean oil and other vegetable oil.

CNO Country No.	QID Quantity code	PID Prod. code	IID Input code	PID Prod. code	IID Input code	CID Country code	P_OS & OX Price of OS, OX	P_SB & XS Price of SB, XS	L Labor input	K Capital input
1	QDP	OS	SB	OX	XS	AUS	1.003	-1.003	0.056	0.098
2	QDP	OS	SB	OX	XS	NZL	1.028	-1.028	0.025	0.009
3	QDP	OS	SB	OX	XS	XOC	1.033	-1.033	0.026	0.018
4	QDP	OS	SB	OX	XS	CHN	1.614	-1.614	0.074	0.101
5	QDP	OS	SB	OX	XS	HKG	1.020	-1.020	0.000	0.000
6	QDP	OS	SB	OX	XS	JPN	1.885	-1.885	0.099	0.085
7	QDP	OS	SB	OX	XS	KOR	1.684	-1.684	0.021	0.064
8	QDP	OS	SB	OX	XS	MNG	1.000	-1.000	0.000	0.000
9	QDP	OS	SB	OX	XS	TWN	1.614	-1.614	0.074	0.101
10	QDP	OS	SB	OX	XS	XEA	1.498	-1.498	0.088	0.075
11	QDP	OS	SB	OX	XS	BRN	1.000	-1.000	0.000	0.000
12	QDP	OS	SB	OX	XS	KHM	1.418	-1.418	0.090	0.371
13	QDP	OS	SB	OX	XS	IDN	1.408	-1.408	0.267	0.235
14	QDP	OS	SB	OX	XS	LAO	1.571	-1.571	0.086	0.100
15	QDP	OS	SB	OX	XS	MYS	1.488	-1.488	0.023	0.106
16	QDP	OS	SB	OX	XS	PHL	1.287	-1.287	0.034	0.304
17	QDP	OS	SB	OX	XS	SGP	1.004	-1.004	0.048	0.070
18	QDP	OS	SB	OX	XS	THA	1.786	-1.786	0.274	0.332
19	QDP	OS	SB	OX	XS	VNM	1.786	-1.786	0.274	0.332
20	QDP	OS	SB	OX	XS	XSE	1.482	-1.482	0.077	0.094
21	QDP	OS	SB	OX	XS	BGD	1.693	-1.693	0.027	0.134
22	QDP	OS	SB	OX	XS	IND	1.821	-1.821	0.065	0.206
23	QDP	OS	SB	OX	XS	NPL	1.726	-1.726	0.024	0.051
24	QDP	OS	SB	OX	XS	PAK	1.089	-1.089	0.030	0.055
25	QDP	OS	SB	OX	XS	LKA	1.155	-1.155	0.100	0.486
26	QDP	OS	SB	OX	XS	XSA	1.249	-1.249	0.025	0.058
27	QDP	OS	SB	OX	XS	CAN	1.445	-1.445	0.061	0.210
28	QDP	OS	SB	OX	XS	USA	1.691	-1.691	0.090	0.062
29	QDP	OS	SB	OX	XS	MEX	1.691	-1.691	0.090	0.062
30	QDP	OS	SB	OX	XS	XNA	1.408	-1.408	0.064	0.185
31	QDP	OS	SB	OX	XS	ARG	1.568	-1.568	0.134	0.134
32	QDP	OS	SB	OX	XS	BOL	1.023	-1.023	0.070	0.159
33	QDP	OS	SB	OX	XS	BRA	1.568	-1.568	0.134	0.134
34	QDP	OS	SB	OX	XS	CHL	1.023	-1.023	0.070	0.159
35	QDP	OS	SB	OX	XS	COL	1.282	-1.282	0.085	0.165
36	QDP	OS	SB	OX	XS	ECU	1.032	-1.032	0.044	0.097
37	QDP	OS	SB	OX	XS	PRY	1.403	-1.403	0.019	0.087
38	QDP	OS	SB	OX	XS	PER	1.133	-1.133	0.123	0.177
39	QDP	OS	SB	OX	XS	URY	1.421	-1.421	0.110	0.162
40	QDP	OS	SB	OX	XS	VEN	1.137	-1.137	0.091	0.170
41	QDP	OS	SB	OX	XS	XSM	1.034	-1.034	0.181	0.224
42	QDP	OS	SB	OX	XS	CRI	1.028	-1.028	0.074	0.124
43	QDP	OS	SB	OX	XS	GTM	1.161	-1.161	0.177	0.252
44	QDP	OS	SB	OX	XS	HND	1.500	-1.500	0.077	0.216
45	QDP	OS	SB	OX	XS	NIC	1.564	-1.564	0.052	0.076
46	QDP	OS	SB	OX	XS	PAN	1.105	-1.105	0.005	0.036
47	QDP	OS	SB	OX	XS	SLV	1.634	-1.634	0.051	0.137
48	QDP	OS	SB	OX	XS	BLZ	1.026	-1.026	0.040	0.086
49	QDP	OS	SB	OX	XS	DOM	1.022	-1.022	0.130	0.359
50	QDP	OS	SB	OX	XS	JAM	1.096	-1.096	0.040	0.040
51	QDP	OS	SB	OX	XS	PRI	1.333	-1.333	0.232	0.020
52	QDP	OS	SB	OX	XS	TTO	1.003	-1.003	0.264	0.329
53	QDP	OS	SB	OX	XS	XCB	1.156	-1.156	0.124	0.185
54	QDP	OS	SB	OX	XS	AUT	1.751	-1.751	0.448	0.013
55	QDP	OS	SB	OX	XS	BEL	1.726	-1.726	0.277	0.114
56	QDP	OS	SB	OX	XS	CYP	1.008	-1.008	0.076	0.144
57	QDP	OS	SB	OX	XS	CZE	1.850	-1.850	0.086	0.485
58	QDP	OS	SB	OX	XS	DNK	1.414	-1.414	0.066	0.071
59	QDP	OS	SB	OX	XS	EST	1.108	-1.108	0.563	0.059
60	QDP	OS	SB	OX	XS	FIN	1.748	-1.748	0.071	0.057
61	QDP	OS	SB	OX	XS	FRA	1.726	-1.726	0.277	0.114
62	QDP	OS	SB	OX	XS	DEU	1.008	-1.008	0.076	0.144
63	QDP	OS	SB	OX	XS	GRC	1.205	-1.205	0.114	0.187
64	QDP	OS	SB	OX	XS	HUN	1.751	-1.751	0.448	0.013
65	QDP	OS	SB	OX	XS	IRL	1.075	-1.075	0.054	0.110
66	QDP	OS	SB	OX	XS	ITA	1.233	-1.233	0.105	0.224
67	QDP	OS	SB	OX	XS	LVA	1.033	-1.033	0.104	0.154
68	QDP	OS	SB	OX	XS	LTU	1.010	-1.010	0.077	0.115
69	QDP	OS	SB	OX	XS	LUX	1.371	-1.371	0.007	0.489
70	QDP	OS	SB	OX	XS	MLT	1.000	-1.000	0.074	0.074
71	QDP	OS	SB	OX	XS	NLD	1.726	-1.726	0.277	0.114
72	QDP	OS	SB	OX	XS	POL	1.370	-1.370	0.542	0.037

Table A-3-8. Elasticity of input demand for soybean oil and other vegetable oil (continued).

CNO	QID	PID	IID	PID	IID	CID	P_OS & OX	P_SB & XS	L	K
Country No.	Quantity code	Prod. code	Input code	Prod. code	Input code	Country code	Price of OS, OX	Price of SB, XS	Labor input	Capital input
73	QDP	OS	SB	OX	XS	PRT	1.934	-1.934	0.138	0.179
74	QDP	OS	SB	OX	XS	SVK	1.790	-1.790	0.440	0.043
75	QDP	OS	SB	OX	XS	SVN	1.043	-1.043	0.361	0.056
76	QDP	OS	SB	OX	XS	ESP	1.934	-1.934	0.138	0.179
77	QDP	OS	SB	OX	XS	SWE	1.347	-1.347	0.088	0.114
78	QDP	OS	SB	OX	XS	GBR	1.075	-1.075	0.054	0.110
79	QDP	OS	SB	OX	XS	CHE	1.098	-1.098	0.057	0.037
80	QDP	OS	SB	OX	XS	NOR	1.709	-1.709	0.031	0.020
81	QDP	OS	SB	OX	XS	XEF	1.261	-1.261	0.051	0.289
82	QDP	OS	SB	OX	XS	ALB	1.685	-1.685	0.068	0.178
83	QDP	OS	SB	OX	XS	BGR	1.150	-1.150	0.519	0.112
84	QDP	OS	SB	OX	XS	BLR	1.327	-1.327	0.096	0.064
85	QDP	OS	SB	OX	XS	HRV	1.275	-1.275	0.098	0.069
86	QDP	OS	SB	OX	XS	ROU	1.266	-1.266	0.099	0.437
87	QDP	OS	SB	OX	XS	RUS	1.236	-1.236	0.096	0.177
88	QDP	OS	SB	OX	XS	UKR	1.327	-1.327	0.096	0.064
89	QDP	OS	SB	OX	XS	XEE	1.319	-1.319	0.090	0.058
90	QDP	OS	SB	OX	XS	XER	1.292	-1.292	0.123	0.133
91	QDP	OS	SB	OX	XS	KAZ	1.077	-1.077	0.134	0.124
92	QDP	OS	SB	OX	XS	KGZ	1.917	-1.917	0.083	0.083
93	QDP	OS	SB	OX	XS	XSU	1.375	-1.375	0.085	0.096
94	QDP	OS	SB	OX	XS	ARM	1.000	-1.000	0.065	0.023
95	QDP	OS	SB	OX	XS	AZE	1.158	-1.158	0.105	0.053
96	QDP	OS	SB	OX	XS	GEO	1.158	-1.158	0.105	0.053
97	QDP	OS	SB	OX	XS	BHR	1.028	-1.028	0.035	0.035
98	QDP	OS	SB	OX	XS	IRN	1.193	-1.193	0.033	0.105
99	QDP	OS	SB	OX	XS	ISR	1.029	-1.029	0.163	0.059
100	QDP	OS	SB	OX	XS	KWT	1.092	-1.092	0.100	0.217
101	QDP	OS	SB	OX	XS	JOR	1.242	-1.242	0.000	0.000
102	QDP	OS	SB	OX	XS	OMN	1.012	-1.012	0.061	0.081
103	QDP	OS	SB	OX	XS	QAT	1.003	-1.003	0.029	0.029
104	QDP	OS	SB	OX	XS	SAU	1.570	-1.570	0.216	0.078
105	QDP	OS	SB	OX	XS	TUR	1.133	-1.133	0.051	0.215
106	QDP	OS	SB	OX	XS	ARE	1.664	-1.664	0.155	0.204
107	QDP	OS	SB	OX	XS	XWS	1.853	-1.853	0.045	0.175
108	QDP	OS	SB	OX	XS	EGY	1.242	-1.242	0.000	0.000
109	QDP	OS	SB	OX	XS	MAR	1.137	-1.137	0.066	0.064
110	QDP	OS	SB	OX	XS	TUN	1.314	-1.314	0.044	0.099
111	QDP	OS	SB	OX	XS	XNF	1.134	-1.134	0.047	0.101
112	QDP	OS	SB	OX	XS	BEN	1.047	-1.047	0.162	0.012
113	QDP	OS	SB	OX	XS	BFA	1.430	-1.430	0.068	0.182
114	QDP	OS	SB	OX	XS	CMR	1.036	-1.036	0.102	0.166
115	QDP	OS	SB	OX	XS	CIV	1.198	-1.198	0.055	0.022
116	QDP	OS	SB	OX	XS	GHA	1.001	-1.001	0.325	0.170
117	QDP	OS	SB	OX	XS	GIN	1.000	-1.000	0.467	0.133
118	QDP	OS	SB	OX	XS	NGA	1.036	-1.036	0.102	0.166
119	QDP	OS	SB	OX	XS	SEN	1.371	-1.371	0.026	0.015
120	QDP	OS	SB	OX	XS	TGO	1.047	-1.047	0.162	0.012
121	QDP	OS	SB	OX	XS	XWF	1.227	-1.227	0.169	0.046
122	QDP	OS	SB	OX	XS	XCF	1.391	-1.391	0.059	0.036
123	QDP	OS	SB	OX	XS	XAC	1.046	-1.046	0.019	0.061
124	QDP	OS	SB	OX	XS	ETH	1.027	-1.027	0.128	0.220
125	QDP	OS	SB	OX	XS	KEN	1.027	-1.027	0.128	0.220
126	QDP	OS	SB	OX	XS	MDG	1.003	-1.003	0.138	0.149
127	QDP	OS	SB	OX	XS	MWI	1.000	-1.000	0.048	0.119
128	QDP	OS	SB	OX	XS	MUS	1.036	-1.036	0.013	0.004
129	QDP	OS	SB	OX	XS	MOZ	1.044	-1.044	0.324	0.184
130	QDP	OS	SB	OX	XS	RWA	1.369	-1.369	0.149	0.498
131	QDP	OS	SB	OX	XS	TZA	1.041	-1.041	0.170	0.373
132	QDP	OS	SB	OX	XS	UGA	1.280	-1.280	0.118	0.049
133	QDP	OS	SB	OX	XS	ZMB	1.295	-1.295	0.072	0.198
134	QDP	OS	SB	OX	XS	ZWE	1.094	-1.094	0.051	0.331
135	QDP	OS	SB	OX	XS	XEC	1.286	-1.286	0.101	0.074
136	QDP	OS	SB	OX	XS	BWA	1.000	-1.000	1.000	0.000
137	QDP	OS	SB	OX	XS	NAM	1.046	-1.046	0.000	0.000
138	QDP	OS	SB	OX	XS	ZAF	1.143	-1.143	0.050	0.099
139	QDP	OS	SB	OX	XS	XSC	1.059	-1.059	0.098	0.173
140	QDP	OS	SB	OX	XS	XTW	1.250	-1.250	0.000	0.000

Table A-3-9. Elasticity of input demand for soybean cake and other oil cakes.

CNO Country No.	QID Quantity code	PID Prod. code	IID Input code	PID Prod. code	IID Input code	CID Country code	P. CS & CX Price of CS, CX	P. SB & XS Price of SB, XS	L Labor input	K Capital input
1	QDP	CS	SB	CX	XS	AUS	1.003	-1.003	0.056	0.098
2	QDP	CS	SB	CX	XS	NZL	1.028	-1.028	0.025	0.009
3	QDP	CS	SB	CX	XS	XOC	1.033	-1.033	0.026	0.018
4	QDP	CS	SB	CX	XS	CHN	1.614	-1.614	0.074	0.101
5	QDP	CS	SB	CX	XS	HKG	1.020	-1.020	0.000	0.000
6	QDP	CS	SB	CX	XS	JPN	1.885	-1.885	0.099	0.085
7	QDP	CS	SB	CX	XS	KOR	1.684	-1.684	0.021	0.064
8	QDP	CS	SB	CX	XS	MNG	1.000	-1.000	0.000	0.000
9	QDP	CS	SB	CX	XS	TWN	1.614	-1.614	0.074	0.101
10	QDP	CS	SB	CX	XS	XEA	1.498	-1.498	0.088	0.075
11	QDP	CS	SB	CX	XS	BRN	1.000	-1.000	0.000	0.000
12	QDP	CS	SB	CX	XS	KHM	1.418	-1.418	0.090	0.371
13	QDP	CS	SB	CX	XS	IDN	1.408	-1.408	0.267	0.235
14	QDP	CS	SB	CX	XS	LAO	1.571	-1.571	0.086	0.100
15	QDP	CS	SB	CX	XS	MYS	1.488	-1.488	0.023	0.106
16	QDP	CS	SB	CX	XS	PHL	1.287	-1.287	0.034	0.304
17	QDP	CS	SB	CX	XS	SGP	1.004	-1.004	0.048	0.070
18	QDP	CS	SB	CX	XS	THA	1.786	-1.786	0.274	0.332
19	QDP	CS	SB	CX	XS	VNM	1.786	-1.786	0.274	0.332
20	QDP	CS	SB	CX	XS	XSE	1.482	-1.482	0.077	0.094
21	QDP	CS	SB	CX	XS	BGD	1.693	-1.693	0.027	0.134
22	QDP	CS	SB	CX	XS	IND	1.821	-1.821	0.065	0.206
23	QDP	CS	SB	CX	XS	NPL	1.726	-1.726	0.024	0.051
24	QDP	CS	SB	CX	XS	PAK	1.089	-1.089	0.030	0.055
25	QDP	CS	SB	CX	XS	LKA	1.155	-1.155	0.100	0.486
26	QDP	CS	SB	CX	XS	XSA	1.249	-1.249	0.025	0.058
27	QDP	CS	SB	CX	XS	CAN	1.445	-1.445	0.061	0.210
28	QDP	CS	SB	CX	XS	USA	1.691	-1.691	0.090	0.062
29	QDP	CS	SB	CX	XS	MEX	1.691	-1.691	0.090	0.062
30	QDP	CS	SB	CX	XS	XNA	1.408	-1.408	0.064	0.185
31	QDP	CS	SB	CX	XS	ARG	1.568	-1.568	0.134	0.134
32	QDP	CS	SB	CX	XS	BOL	1.023	-1.023	0.070	0.159
33	QDP	CS	SB	CX	XS	BRA	1.568	-1.568	0.134	0.134
34	QDP	CS	SB	CX	XS	CHL	1.023	-1.023	0.070	0.159
35	QDP	CS	SB	CX	XS	COL	1.282	-1.282	0.085	0.165
36	QDP	CS	SB	CX	XS	ECU	1.032	-1.032	0.044	0.097
37	QDP	CS	SB	CX	XS	PRY	1.403	-1.403	0.019	0.087
38	QDP	CS	SB	CX	XS	PER	1.133	-1.133	0.123	0.177
39	QDP	CS	SB	CX	XS	URY	1.421	-1.421	0.110	0.162
40	QDP	CS	SB	CX	XS	VEN	1.137	-1.137	0.091	0.170
41	QDP	CS	SB	CX	XS	XSM	1.034	-1.034	0.181	0.224
42	QDP	CS	SB	CX	XS	CRI	1.028	-1.028	0.074	0.124
43	QDP	CS	SB	CX	XS	GTM	1.161	-1.161	0.177	0.252
44	QDP	CS	SB	CX	XS	HND	1.500	-1.500	0.077	0.216
45	QDP	CS	SB	CX	XS	NIC	1.564	-1.564	0.052	0.076
46	QDP	CS	SB	CX	XS	PAN	1.105	-1.105	0.005	0.036
47	QDP	CS	SB	CX	XS	SLV	1.634	-1.634	0.051	0.137
48	QDP	CS	SB	CX	XS	BLZ	1.026	-1.026	0.040	0.086
49	QDP	CS	SB	CX	XS	DOM	1.022	-1.022	0.130	0.359
50	QDP	CS	SB	CX	XS	JAM	1.096	-1.096	0.040	0.040
51	QDP	CS	SB	CX	XS	PRI	1.333	-1.333	0.232	0.020
52	QDP	CS	SB	CX	XS	TTO	1.003	-1.003	0.264	0.329
53	QDP	CS	SB	CX	XS	XCB	1.156	-1.156	0.124	0.185
54	QDP	CS	SB	CX	XS	AUT	1.751	-1.751	0.448	0.013
55	QDP	CS	SB	CX	XS	BEL	1.726	-1.726	0.277	0.114
56	QDP	CS	SB	CX	XS	CYP	1.008	-1.008	0.076	0.144
57	QDP	CS	SB	CX	XS	CZE	1.850	-1.850	0.086	0.485
58	QDP	CS	SB	CX	XS	DNK	1.414	-1.414	0.066	0.071
59	QDP	CS	SB	CX	XS	EST	1.108	-1.108	0.563	0.059
60	QDP	CS	SB	CX	XS	FIN	1.748	-1.748	0.071	0.057
61	QDP	CS	SB	CX	XS	FRA	1.726	-1.726	0.277	0.114
62	QDP	CS	SB	CX	XS	DEU	1.008	-1.008	0.076	0.144
63	QDP	CS	SB	CX	XS	GRC	1.205	-1.205	0.114	0.187
64	QDP	CS	SB	CX	XS	HUN	1.751	-1.751	0.448	0.013
65	QDP	CS	SB	CX	XS	IRL	1.075	-1.075	0.054	0.110
66	QDP	CS	SB	CX	XS	ITA	1.233	-1.233	0.105	0.224
67	QDP	CS	SB	CX	XS	LVA	1.033	-1.033	0.104	0.154
68	QDP	CS	SB	CX	XS	LTU	1.010	-1.010	0.077	0.115
69	QDP	CS	SB	CX	XS	LUX	1.371	-1.371	0.007	0.489
70	QDP	CS	SB	CX	XS	MLT	1.000	-1.000	0.074	0.074
71	QDP	CS	SB	CX	XS	NLD	1.726	-1.726	0.277	0.114
72	QDP	CS	SB	CX	XS	POL	1.370	-1.370	0.542	0.037

Table A-3-9. Elasticity of input demand for soybean cake and other oil cakes (continued).

CNO	QID	PID	IID	PID	IID	CID	P. CS & CX	P. SB & XS	L	K
Country No.	Quantity code	Prod. code	Input code	Prod. code	Input code	Country code	Price of CS, CX	Price of SB, XS	Labor input	Capital input
73	QDP	CS	SB	CX	XS	PRT	1.934	-1.934	0.138	0.179
74	QDP	CS	SB	CX	XS	SVK	1.790	-1.790	0.440	0.043
75	QDP	CS	SB	CX	XS	SVN	1.043	-1.043	0.361	0.056
76	QDP	CS	SB	CX	XS	ESP	1.934	-1.934	0.138	0.179
77	QDP	CS	SB	CX	XS	SWE	1.347	-1.347	0.088	0.114
78	QDP	CS	SB	CX	XS	GBR	1.075	-1.075	0.054	0.110
79	QDP	CS	SB	CX	XS	CHE	1.098	-1.098	0.057	0.037
80	QDP	CS	SB	CX	XS	NOR	1.709	-1.709	0.031	0.020
81	QDP	CS	SB	CX	XS	XEF	1.261	-1.261	0.051	0.289
82	QDP	CS	SB	CX	XS	ALB	1.685	-1.685	0.068	0.178
83	QDP	CS	SB	CX	XS	BGR	1.150	-1.150	0.519	0.112
84	QDP	CS	SB	CX	XS	BLR	1.327	-1.327	0.096	0.064
85	QDP	CS	SB	CX	XS	HRV	1.275	-1.275	0.098	0.069
86	QDP	CS	SB	CX	XS	ROU	1.266	-1.266	0.099	0.437
87	QDP	CS	SB	CX	XS	RUS	1.236	-1.236	0.096	0.177
88	QDP	CS	SB	CX	XS	UKR	1.327	-1.327	0.096	0.064
89	QDP	CS	SB	CX	XS	XEE	1.319	-1.319	0.090	0.058
90	QDP	CS	SB	CX	XS	XER	1.292	-1.292	0.123	0.133
91	QDP	CS	SB	CX	XS	KAZ	1.077	-1.077	0.134	0.124
92	QDP	CS	SB	CX	XS	KGZ	1.917	-1.917	0.083	0.083
93	QDP	CS	SB	CX	XS	XSU	1.375	-1.375	0.085	0.096
94	QDP	CS	SB	CX	XS	ARM	1.000	-1.000	0.065	0.023
95	QDP	CS	SB	CX	XS	AZE	1.158	-1.158	0.105	0.053
96	QDP	CS	SB	CX	XS	GEO	1.158	-1.158	0.105	0.053
97	QDP	CS	SB	CX	XS	BHR	1.028	-1.028	0.035	0.035
98	QDP	CS	SB	CX	XS	IRN	1.193	-1.193	0.033	0.105
99	QDP	CS	SB	CX	XS	ISR	1.029	-1.029	0.163	0.059
100	QDP	CS	SB	CX	XS	KWT	1.092	-1.092	0.100	0.217
101	QDP	CS	SB	CX	XS	JOR	1.242	-1.242	0.000	0.000
102	QDP	CS	SB	CX	XS	OMN	1.012	-1.012	0.061	0.081
103	QDP	CS	SB	CX	XS	QAT	1.003	-1.003	0.029	0.029
104	QDP	CS	SB	CX	XS	SAU	1.570	-1.570	0.216	0.078
105	QDP	CS	SB	CX	XS	TUR	1.133	-1.133	0.051	0.215
106	QDP	CS	SB	CX	XS	ARE	1.664	-1.664	0.155	0.204
107	QDP	CS	SB	CX	XS	XWS	1.853	-1.853	0.045	0.175
108	QDP	CS	SB	CX	XS	EGY	1.242	-1.242	0.000	0.000
109	QDP	CS	SB	CX	XS	MAR	1.137	-1.137	0.066	0.064
110	QDP	CS	SB	CX	XS	TUN	1.314	-1.314	0.044	0.099
111	QDP	CS	SB	CX	XS	XNF	1.134	-1.134	0.047	0.101
112	QDP	CS	SB	CX	XS	BEN	1.047	-1.047	0.162	0.012
113	QDP	CS	SB	CX	XS	BFA	1.430	-1.430	0.068	0.182
114	QDP	CS	SB	CX	XS	CMR	1.036	-1.036	0.102	0.166
115	QDP	CS	SB	CX	XS	CIV	1.198	-1.198	0.055	0.022
116	QDP	CS	SB	CX	XS	GHA	1.001	-1.001	0.325	0.170
117	QDP	CS	SB	CX	XS	GIN	1.000	-1.000	0.467	0.133
118	QDP	CS	SB	CX	XS	NGA	1.036	-1.036	0.102	0.166
119	QDP	CS	SB	CX	XS	SEN	1.371	-1.371	0.026	0.015
120	QDP	CS	SB	CX	XS	TGO	1.047	-1.047	0.162	0.012
121	QDP	CS	SB	CX	XS	XWF	1.227	-1.227	0.169	0.046
122	QDP	CS	SB	CX	XS	XCF	1.391	-1.391	0.059	0.036
123	QDP	CS	SB	CX	XS	XAC	1.046	-1.046	0.019	0.061
124	QDP	CS	SB	CX	XS	ETH	1.027	-1.027	0.128	0.220
125	QDP	CS	SB	CX	XS	KEN	1.027	-1.027	0.128	0.220
126	QDP	CS	SB	CX	XS	MDG	1.003	-1.003	0.138	0.149
127	QDP	CS	SB	CX	XS	MWI	1.000	-1.000	0.048	0.119
128	QDP	CS	SB	CX	XS	MUS	1.036	-1.036	0.013	0.004
129	QDP	CS	SB	CX	XS	MOZ	1.044	-1.044	0.324	0.184
130	QDP	CS	SB	CX	XS	RWA	1.369	-1.369	0.149	0.498
131	QDP	CS	SB	CX	XS	TZA	1.041	-1.041	0.170	0.373
132	QDP	CS	SB	CX	XS	UGA	1.280	-1.280	0.118	0.049
133	QDP	CS	SB	CX	XS	ZMB	1.295	-1.295	0.072	0.198
134	QDP	CS	SB	CX	XS	ZWE	1.094	-1.094	0.051	0.331
135	QDP	CS	SB	CX	XS	XEC	1.286	-1.286	0.101	0.074
136	QDP	CS	SB	CX	XS	BWA	1.000	-1.000	1.000	0.000
137	QDP	CS	SB	CX	XS	NAM	1.046	-1.046	0.000	0.000
138	QDP	CS	SB	CX	XS	ZAF	1.143	-1.143	0.050	0.099
139	QDP	CS	SB	CX	XS	XSC	1.059	-1.059	0.098	0.173
140	QDP	CS	SB	CX	XS	XTW	1.250	-1.250	0.000	0.000

Table A-3-10. Elasticity of supply for beef and mutton.

CNO	PID	CID	P_BF	P_RI	P_WH	P_MZ	P_XG	P_SB	P_XS	P_CS	P_CX	P_SK	A	L	K	H _{t-2}
Country No.	Prod. code	Country code	Price of BF	Price of RI	Price of WH	Price of MZ	Price of XG	Price of SB	Price of XS	Price of CS	Price of CX	Price of SK	Land input	Labor input	Capital input	Head t-2
1	BF, SH	AUS	0.037	0.000	0.000	0.000	-0.002	-0.001	-0.034	0.000	0.000	-0.001	0.105	0.207	0.140	0.800
2	BF, SH	NZL	0.017	0.000	-0.008	-0.003	-0.006	0.000	0.000	0.000	0.000	0.000	0.051	0.181	0.087	0.800
3	BF, SH	XOC	0.022	-0.001	-0.012	-0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.166	0.117	0.038	0.800
4	BF, SH	CHN	0.104	-0.031	-0.040	-0.018	-0.001	-0.002	-0.007	-0.004	-0.002	0.000	0.084	0.351	0.084	0.800
5	BF, SH	HKG	0.007	-0.001	-0.003	0.000	0.000	0.000	0.000	0.000	-0.004	0.000	0.132	0.137	0.028	0.800
6	BF, SH	JPN	0.026	-0.016	-0.001	0.000	-0.001	-0.004	0.000	-0.002	-0.002	-0.002	0.058	0.155	0.100	0.800
7	BF, SH	KOR	0.076	-0.068	0.000	-0.002	-0.002	0.000	0.000	-0.002	-0.001	0.000	0.204	0.137	0.036	0.800
8	BF, SH	MNG	0.005	0.000	-0.004	0.000	-0.001	0.000	0.000	0.000	0.000	0.000	0.269	0.467	0.111	0.800
9	BF, SH	TWN	0.116	-0.003	0.000	-0.027	-0.001	0.000	-0.013	-0.070	-0.001	0.000	0.096	0.116	0.020	0.800
10	BF, SH	XEA	0.005	0.000	-0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.393	0.396	0.078	0.800
11	BF, SH	BRN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.083	0.042	0.000	0.800
12	BF, SH	KHM	0.008	-0.006	-0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.461	0.375	0.063	0.800
13	BF, SH	IDN	0.210	-0.186	0.000	-0.010	0.000	0.000	-0.012	0.000	-0.001	0.000	0.388	0.317	0.053	0.800
14	BF, SH	LAO	0.026	-0.020	0.000	-0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.369	0.300	0.051	0.800
15	BF, SH	MYS	0.006	0.000	0.000	-0.001	0.000	0.000	-0.004	0.000	-0.001	0.000	0.307	0.234	0.042	0.800
16	BF, SH	PHL	0.002	0.000	-0.001	-0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.298	0.391	0.029	0.800
17	BF, SH	SGP	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.331	0.261	0.042	0.800
18	BF, SH	THA	0.064	-0.064	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.441	0.362	0.060	0.800
19	BF, SH	VNM	0.055	-0.031	-0.002	-0.009	0.000	-0.002	-0.011	0.000	0.000	0.000	0.300	0.244	0.041	0.800
20	BF, SH	XSE	0.027	-0.020	-0.001	-0.004	-0.001	0.000	-0.001	0.000	0.000	0.000	0.373	0.304	0.051	0.800
21	BF, SH	BGD	0.568	-0.373	-0.004	-0.001	0.000	0.000	0.000	0.000	-0.190	0.000	0.173	0.149	0.071	0.800
22	BF, SH	IND	0.056	-0.007	-0.003	-0.007	-0.006	0.000	0.000	-0.013	-0.020	0.000	0.172	0.148	0.070	0.800
23	BF, SH	NPL	0.300	-0.299	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.232	0.455	0.112	0.800
24	BF, SH	PAK	0.587	-0.113	-0.330	-0.003	0.000	0.000	-0.099	0.000	-0.042	0.000	0.319	0.275	0.130	0.800
25	BF, SH	LKA	0.024	-0.260	-0.024	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.375	0.321	0.154	0.800
26	BF, SH	XSA	0.274	-0.260	-0.005	-0.002	-0.003	0.000	-0.004	0.000	0.000	0.000	0.325	0.279	0.133	0.800
27	BF, SH	CAN	0.113	0.000	-0.005	-0.045	-0.043	0.000	0.000	-0.004	-0.015	0.000	0.048	0.116	0.128	0.800
28	BF, SH	USA	0.490	-0.002	-0.004	-0.455	-0.019	-0.001	0.000	-0.009	-0.001	0.000	0.099	0.121	0.120	0.800
29	BF, SH	MEX	0.178	-0.001	-0.007	-0.107	-0.039	-0.002	-0.020	-0.001	-0.001	0.000	0.139	0.228	0.124	0.800
30	BF, SH	XNA	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.047	0.102	0.055	0.800
31	BF, SH	ARG	0.039	0.000	-0.001	-0.023	-0.009	-0.005	0.000	-0.001	0.000	0.000	0.169	0.149	0.150	0.800
32	BF, SH	BOL	0.068	-0.027	-0.035	-0.001	-0.001	-0.001	0.000	-0.002	0.000	0.000	0.182	0.298	0.162	0.800
33	BF, SH	BRA	0.050	-0.002	0.000	-0.045	-0.002	-0.001	0.000	0.000	0.000	0.000	0.096	0.141	0.360	0.800
34	BF, SH	CHL	0.048	-0.002	-0.022	-0.008	-0.004	0.000	-0.001	-0.006	-0.005	-0.005	0.166	0.265	0.148	0.800
35	BF, SH	COL	0.015	0.000	0.000	-0.009	0.000	0.000	0.000	-0.004	-0.002	0.000	0.180	0.222	0.160	0.800
36	BF, SH	ECU	0.025	-0.014	-0.002	0.000	0.000	-0.003	-0.006	0.000	0.000	0.000	0.109	0.147	0.097	0.800
37	BF, SH	PRY	0.025	-0.002	-0.009	-0.002	0.000	0.000	0.000	-0.011	-0.001	0.000	0.169	0.202	0.151	0.800
38	BF, SH	PER	0.259	-0.021	-0.096	-0.102	-0.018	0.000	-0.017	0.000	-0.004	0.000	0.202	0.339	0.029	0.800
39	BF, SH	URY	0.011	0.000	0.000	-0.004	-0.004	-0.003	0.000	0.000	0.000	-0.002	0.195	0.293	0.174	0.800
40	BF, SH	VEN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.141	0.231	0.126	0.800
41	BF, SH	XSM	0.009	0.000	0.000	0.000	0.000	0.000	-0.009	0.000	0.000	-0.003	0.160	0.255	0.143	0.800
42	BF, SH	CRI	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.172	0.227	0.154	0.800
43	BF, SH	GTM	0.018	0.000	0.000	0.000	0.000	-0.004	-0.014	0.000	0.000	-0.002	0.166	0.271	0.148	0.800
44	BF, SH	HND	0.003	0.000	-0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.179	0.295	0.160	0.800
45	BF, SH	NIC	0.064	-0.058	0.000	-0.005	-0.001	0.000	0.000	0.000	0.000	0.000	0.196	0.293	0.175	0.800
46	BF, SH	PAN	0.020	-0.003	0.000	-0.002	0.000	0.000	-0.001	0.000	-0.014	0.000	0.135	0.222	0.121	0.800

Table A-3-10. Elasticity of supply for beef and mutton (continued).

CNO Country No.	PID Prod. code	CID Country code	P_BF Price of BF	P_RI Price of RI	P_WH Price of WH	P_MZ Price of MZ	P_XG Price of XG	P_SB Price of SB	P_XS Price of XS	P_CS Price of CS	P_CX Price of CX	P_SK Price of SK	A Land input	L Labor input	K Capital input	H _{t-2} Head t-2
47	BF, SH	SLV	0.026	0.000	-0.002	-0.018	-0.003	0.000	0.000	0.000	-0.003	0.000	0.201	0.324	0.180	0.800
48	BF, SH	BLZ	0.014	-0.014	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.082	0.123	0.068	0.800
49	BF, SH	DOM	0.011	-0.006	0.000	-0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.199	0.269	0.178	0.800
50	BF, SH	JAM	0.011	0.000	-0.005	0.000	0.000	0.000	0.000	0.000	-0.007	0.000	0.048	0.236	0.092	0.800
51	BF, SH	PRI	0.049	0.000	-0.049	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.134	0.182	0.120	0.800
52	BF, SH	TTO	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.098	0.141	0.087	0.800
53	BF, SH	XCB	0.182	-0.024	-0.063	-0.067	-0.013	0.000	-0.011	0.000	0.000	0.000	0.165	0.223	0.148	0.800
54	BF, SH	AUT	0.034	0.000	-0.004	-0.015	-0.011	0.000	0.000	0.000	-0.003	-0.003	0.018	0.103	0.033	0.800
55	BF, SH	BEL	0.024	0.000	-0.006	-0.003	-0.001	0.000	0.000	0.000	-0.012	-0.010	0.016	0.095	0.031	0.800
56	BF, SH	CYP	0.265	-0.001	-0.033	0.000	-0.230	0.000	0.000	0.000	-0.001	0.000	0.077	0.398	0.225	0.800
57	BF, SH	CZE	0.124	-0.001	-0.046	-0.020	-0.048	0.000	-0.001	-0.001	-0.010	-0.036	0.054	0.058	0.018	0.800
58	BF, SH	DNK	0.089	0.000	-0.045	-0.001	-0.036	0.000	0.000	-0.001	-0.005	-0.007	0.023	0.066	0.085	0.800
59	BF, SH	EST	0.071	0.000	-0.029	0.000	-0.037	0.000	0.000	0.000	-0.004	-0.016	0.029	0.054	0.012	0.800
60	BF, SH	FIN	0.140	0.000	-0.012	0.000	-0.125	0.000	0.000	0.000	-0.003	-0.007	0.017	0.093	0.031	0.800
61	BF, SH	FRA	0.036	-0.001	-0.012	-0.010	-0.008	0.000	-0.001	-0.001	-0.004	-0.004	0.022	0.123	0.041	0.800
62	BF, SH	DEU	0.014	0.000	-0.004	-0.002	-0.005	0.000	0.000	0.000	-0.002	-0.006	0.038	0.132	0.043	0.800
63	BF, SH	GRC	0.169	-0.004	-0.003	-0.121	-0.029	0.000	0.000	-0.006	-0.006	-0.002	0.061	0.378	0.117	0.800
64	BF, SH	HUN	0.124	0.000	-0.025	-0.071	-0.017	0.000	0.000	0.000	-0.010	-0.007	0.070	0.093	0.024	0.800
65	BF, SH	IRL	0.031	0.000	-0.009	0.000	-0.018	0.000	0.000	0.000	-0.003	-0.009	0.049	0.301	0.094	0.800
66	BF, SH	ITA	0.125	-0.002	-0.012	-0.086	-0.016	0.000	0.000	0.000	-0.003	0.000	0.017	0.097	0.033	0.800
67	BF, SH	LVA	0.022	0.000	-0.006	0.000	-0.008	0.000	-0.004	0.000	-0.016	-0.016	0.034	0.071	0.015	0.800
68	BF, SH	LTU	0.182	0.000	-0.064	-0.006	-0.109	0.000	0.000	0.000	-0.003	-0.003	0.092	0.190	0.040	0.800
69	BF, SH	LUX	0.024	0.000	-0.006	-0.003	-0.001	0.000	0.000	0.000	-0.012	-0.010	0.016	0.095	0.031	0.800
70	BF, SH	MLT	0.125	-0.002	-0.012	-0.086	-0.016	0.000	0.000	0.000	-0.003	0.000	0.017	0.097	0.033	0.800
71	BF, SH	NLD	0.022	0.000	-0.008	-0.005	-0.006	0.000	-0.001	-0.001	-0.001	-0.008	0.051	0.268	0.098	0.800
72	BF, SH	POL	0.319	-0.001	-0.072	-0.036	-0.207	0.000	-0.001	0.000	-0.003	-0.018	0.055	0.081	0.019	0.800
73	BF, SH	PRT	0.100	-0.003	-0.017	-0.049	-0.008	0.000	0.000	0.000	-0.008	-0.012	0.020	0.117	0.038	0.800
74	BF, SH	SVK	0.051	0.000	-0.014	-0.016	-0.008	0.000	-0.004	-0.002	-0.007	-0.008	0.142	0.138	0.048	0.800
75	BF, SH	SVN	0.060	0.000	-0.008	-0.034	-0.012	0.000	0.000	0.000	-0.006	-0.006	0.110	0.163	0.038	0.800
76	BF, SH	ESP	0.180	-0.002	-0.039	-0.032	-0.073	0.000	0.000	-0.027	-0.007	-0.017	0.042	0.242	0.080	0.800
77	BF, SH	SWE	0.055	0.000	-0.018	0.000	-0.031	0.000	0.000	0.000	-0.004	-0.006	0.016	0.090	0.031	0.800
78	BF, SH	GBR	0.042	-0.001	-0.026	0.000	-0.012	0.000	0.000	-0.001	-0.002	-0.006	0.066	0.279	0.085	0.800
79	BF, SH	CHE	0.011	0.000	-0.004	-0.002	-0.004	0.000	0.000	0.000	0.000	0.000	0.163	0.182	0.230	0.800
80	BF, SH	NOR	0.024	0.000	0.000	0.000	-0.019	0.000	-0.003	0.000	0.000	0.000	0.190	0.226	0.267	0.800
81	BF, SH	XEF	0.009	0.000	-0.009	0.000	0.000	0.000	0.000	0.000	0.000	-0.003	0.022	0.028	0.031	0.800
82	BF, SH	ALB	0.076	0.000	-0.056	-0.017	-0.002	0.000	0.000	0.000	0.000	0.000	0.143	0.199	0.049	0.800
83	BF, SH	BGR	0.111	-0.009	-0.031	-0.045	-0.019	0.000	-0.001	0.000	-0.006	-0.001	0.107	0.144	0.037	0.800
84	BF, SH	BLR	0.532	-0.019	-0.008	-0.080	-0.422	0.000	-0.003	0.000	0.000	0.000	0.039	0.081	0.017	0.800
85	BF, SH	HRV	0.066	0.000	-0.011	-0.046	-0.009	0.000	0.000	0.000	0.000	0.000	0.097	0.141	0.033	0.800
86	BF, SH	ROU	0.407	-0.001	-0.028	-0.311	-0.061	0.000	0.000	0.000	-0.005	-0.005	0.093	0.140	0.032	0.800
87	BF, SH	RUS	0.080	-0.001	-0.007	-0.015	-0.052	0.000	-0.002	0.000	0.000	-0.002	0.131	0.271	0.056	0.800
88	BF, SH	UKR	0.164	0.000	-0.028	-0.086	-0.046	0.000	-0.001	0.000	-0.002	-0.001	0.097	0.200	0.041	0.800
89	BF, SH	XEE	0.206	0.000	-0.036	-0.143	-0.023	0.000	-0.001	-0.001	-0.002	-0.002	0.121	0.253	0.051	0.800
90	BF, SH	XER	0.090	0.000	-0.013	-0.067	-0.008	0.000	0.000	0.000	-0.001	-0.001	0.100	0.156	0.047	0.800
91	BF, SH	KAZ	0.004	-0.001	-0.001	0.000	-0.001	0.000	-0.001	0.000	0.000	0.000	0.098	0.194	0.042	0.800
92	BF, SH	KGZ	0.022	0.000	-0.021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.121	0.257	0.052	0.800
93	BF, SH	XSU	0.019	0.000	-0.018	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.111	0.219	0.048	0.800

Table A-3-10. Elasticity of supply for beef and mutton (continued).

CNO Country No.	PID Prod. code	CID Country code	P_BF Price of BF	P_RI Price of RI	P_WH Price of WH	P_MZ Price of MZ	P_XG Price of XG	P_SB Price of SB	P_XS Price of XS	P_CS Price of CS	P_CX Price of CX	P_SK Price of SK	A Land input	L Labor input	K Capital input	H _{t-2} Head t-2
94	BF, SH	ARM	0.215	0.000	-0.206	0.000	0.000	0.000	0.000	0.000	-0.009	-0.006	0.123	0.262	0.053	0.800
95	BF, SH	AZE	0.020	-0.001	-0.015	0.000	0.000	0.000	-0.003	0.000	0.000	0.000	0.201	0.426	0.086	0.800
96	BF, SH	GEO	0.036	0.000	-0.036	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.153	0.325	0.066	0.800
97	BF, SH	BHR	0.017	-0.008	-0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.059	0.185	0.176	0.800
98	BF, SH	IRN	0.212	-0.004	-0.053	-0.033	-0.050	-0.017	-0.055	0.000	0.000	-0.001	0.047	0.243	0.137	0.800
99	BF, SH	ISR	0.229	0.000	-0.119	-0.038	-0.018	0.000	-0.050	-0.002	0.000	0.000	0.066	0.302	0.193	0.800
100	BF, SH	KWT	0.036	0.000	-0.013	-0.002	-0.002	0.000	0.000	-0.004	-0.011	0.000	0.039	0.198	0.113	0.800
101	BF, SH	JOR	0.098	0.000	-0.001	-0.026	-0.058	0.000	-0.004	0.000	-0.010	0.000	0.070	0.359	0.204	0.800
102	BF, SH	OMN	0.125	-0.009	-0.028	0.000	-0.065	0.000	0.000	0.000	-0.023	-0.023	0.037	0.181	0.102	0.800
103	BF, SH	QAT	0.009	-0.003	-0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.085	0.383	0.249	0.800
104	BF, SH	SAU	0.083	0.000	-0.017	-0.022	-0.034	0.000	-0.007	-0.003	-0.001	-0.002	0.075	0.383	0.217	0.800
105	BF, SH	TUR	0.129	-0.002	-0.026	-0.026	-0.048	-0.001	-0.022	-0.002	-0.003	0.000	0.068	0.349	0.197	0.800
106	BF, SH	ARE	0.052	0.000	-0.001	-0.003	-0.042	0.000	0.000	-0.001	-0.007	-0.005	0.076	0.392	0.222	0.800
107	BF, SH	XWS	0.048	0.000	-0.035	-0.001	-0.003	0.000	-0.008	0.000	0.000	0.000	0.062	0.320	0.182	0.800
108	BF, SH	EGY	0.098	0.000	-0.001	-0.026	-0.058	0.000	-0.004	0.000	-0.010	0.000	0.070	0.359	0.204	0.800
109	BF, SH	MAR	0.047	0.000	-0.023	-0.001	-0.011	0.000	-0.005	-0.004	-0.003	0.000	0.093	0.469	0.272	0.800
110	BF, SH	TUN	0.067	0.000	-0.019	0.000	-0.018	0.000	-0.012	-0.018	0.000	0.000	0.067	0.338	0.196	0.800
111	BF, SH	XNF	0.066	0.000	-0.021	0.000	-0.018	0.000	-0.003	0.000	-0.023	0.000	0.065	0.333	0.189	0.800
112	BF, SH	BEN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.070	0.404	0.094	0.800
113	BF, SH	BFA	0.035	-0.001	-0.005	-0.009	-0.020	0.000	0.000	0.000	0.000	0.000	0.112	0.649	0.149	0.800
114	BF, SH	CMR	0.065	-0.001	-0.014	-0.016	-0.011	0.000	-0.009	0.000	-0.013	0.000	0.092	0.494	0.122	0.800
115	BF, SH	CIV	0.296	0.000	-0.174	-0.093	-0.025	0.000	0.000	0.000	-0.003	0.000	0.111	0.641	0.146	0.800
116	BF, SH	GHA	0.296	0.000	-0.174	-0.093	-0.025	0.000	0.000	0.000	-0.003	0.000	0.111	0.641	0.146	0.800
117	BF, SH	GIN	0.047	-0.006	-0.007	-0.002	-0.002	0.000	-0.002	0.000	-0.029	0.000	0.097	0.563	0.130	0.800
118	BF, SH	NGA	0.009	0.000	0.000	-0.003	-0.004	0.000	-0.001	0.000	0.000	0.000	0.113	0.657	0.151	0.800
119	BF, SH	SEN	0.012	-0.011	-0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.103	0.553	0.138	0.800
120	BF, SH	TGO	0.133	-0.129	0.000	-0.003	-0.001	0.000	0.000	0.000	0.000	0.000	0.085	0.494	0.114	0.800
121	BF, SH	XWF	0.158	-0.016	-0.136	-0.001	-0.004	0.000	-0.001	0.000	-0.001	0.000	0.067	0.381	0.089	0.800
122	BF, SH	XCF	0.005	-0.003	-0.001	0.000	-0.001	0.000	0.000	0.000	0.000	0.000	0.094	0.505	0.125	0.800
123	BF, SH	XAC	0.009	0.000	-0.001	-0.007	-0.001	0.000	0.000	0.000	-0.001	-0.003	0.112	0.433	0.180	0.800
124	BF, SH	ETH	0.031	0.000	-0.001	-0.011	-0.019	0.000	0.000	0.000	0.000	0.000	0.105	0.576	0.140	0.800
125	BF, SH	KEN	0.008	0.000	-0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.065	0.349	0.087	0.800
126	BF, SH	MDG	0.015	0.000	-0.002	-0.002	0.000	0.000	-0.001	0.000	-0.011	0.000	0.054	0.286	0.072	0.800
127	BF, SH	MWI	0.042	0.000	-0.002	-0.034	-0.001	0.000	0.000	0.000	-0.005	0.000	0.114	0.391	0.190	0.800
128	BF, SH	MUS	0.015	0.000	-0.008	-0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.076	0.235	0.121	0.800
129	BF, SH	MOZ	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.104	0.376	0.175	0.800
130	BF, SH	RWA	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-0.003	0.000	0.113	0.608	0.152	0.800
131	BF, SH	TZA	0.085	0.000	-0.006	-0.058	-0.015	0.000	0.000	0.000	-0.006	0.000	0.133	0.474	0.222	0.800
132	BF, SH	UGA	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.048	0.257	0.064	0.800
133	BF, SH	ZMB	0.038	0.000	-0.027	-0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.088	0.313	0.147	0.800
134	BF, SH	ZWE	0.002	-0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.091	0.106	0.082	0.800
135	BF, SH	XEC	0.074	0.000	-0.018	-0.001	-0.055	0.000	0.000	0.000	0.000	0.000	0.044	0.249	0.059	0.800
136	BF, SH	BWA	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.106	0.244	0.394	0.800
137	BF, SH	NAM	0.002	0.000	-0.001	-0.001	-0.001	0.000	0.000	0.000	0.000	-0.001	0.110	0.263	0.406	0.800
138	BF, SH	ZAF	0.025	0.000	-0.003	-0.020	-0.001	0.000	0.000	0.000	0.000	0.000	0.057	0.121	0.211	0.800
139	BF, SH	XSC	0.013	0.000	0.000	-0.006	-0.001	0.000	-0.002	0.000	-0.003	0.000	0.110	0.235	0.405	0.800
140	BF, SH	XTW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.063	0.125	0.063	0.800

Table A-3-11. Elasticity of supply for pork, poultry meat, other meat, and eggs.

CNO Country No.	PID Prod. code	CID Country code	P_PK-EG Price of PK-EG	P_RI Price of RI	P_WH Price of WH	P_MZ Price of MZ	P_XG Price of XG	P_SB Price of SB	P_XS Price of XS	P_CS Price of CS	P_CX Price of CX	P_SK Price of SK	A Land input	L Labor input	K Capital input	H _{t-1} Head t-1
1	PK, PM, XM, EG	AUS	0.271	-0.001	-0.010	-0.008	-0.242	0.000	-0.010	0.000	0.000	-0.001	0.116	0.227	0.154	0.700
2	PK, PM, XM, EG	NZL	0.042	0.000	-0.038	-0.004	-0.007	0.000	-0.004	0.000	0.000	0.000	0.052	0.186	0.089	0.700
3	PK, PM, XM, EG	XOC	0.139	-0.002	-0.125	-0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.163	0.114	0.037	0.700
4	PK, PM, XM, EG	CHN	0.151	-0.059	-0.078	-0.008	0.000	-0.003	-0.008	-0.004	-0.002	0.000	0.156	0.269	0.065	0.700
5	PK, PM, XM, EG	HKG	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.191	0.198	0.040	0.700
6	PK, PM, XM, EG	JPN	0.012	-0.009	0.000	0.000	0.000	-0.002	0.000	-0.001	-0.001	-0.001	0.031	0.082	0.053	0.700
7	PK, PM, XM, EG	KOR	0.012	-0.009	0.000	0.000	0.000	-0.002	0.000	-0.001	-0.001	-0.001	0.031	0.082	0.053	0.700
8	PK, PM, XM, EG	MNG	0.070	0.000	-0.070	0.000	-0.001	0.000	0.000	0.000	0.000	0.000	0.255	0.441	0.105	0.700
9	PK, PM, XM, EG	TWN	0.061	-0.001	-0.016	-0.001	-0.001	0.000	-0.004	-0.044	-0.001	0.000	0.095	0.115	0.020	0.700
10	PK, PM, XM, EG	XEA	0.066	-0.002	-0.058	0.000	0.000	-0.005	0.000	0.000	0.000	0.000	0.316	0.318	0.063	0.700
11	PK, PM, XM, EG	BRN	0.000	0.000	0.000	0.000	0.000	0.000	-0.004	0.000	0.000	0.000	0.114	0.092	0.015	0.700
12	PK, PM, XM, EG	KHM	0.047	-0.044	-0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.249	0.202	0.034	0.700
13	PK, PM, XM, EG	IDN	0.012	-0.002	-0.001	-0.010	0.000	0.000	-0.001	0.000	0.000	0.000	0.238	0.195	0.033	0.700
14	PK, PM, XM, EG	LAO	0.107	-0.101	0.000	-0.005	0.000	-0.001	-0.003	0.000	-0.001	0.000	0.149	0.122	0.021	0.700
15	PK, PM, XM, EG	MYS	0.001	0.000	0.000	-0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.253	0.193	0.035	0.700
16	PK, PM, XM, EG	PHL	0.016	-0.001	-0.002	-0.013	0.000	0.000	0.000	0.000	0.000	0.000	0.260	0.341	0.025	0.700
17	PK, PM, XM, EG	SGP	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.109	0.087	0.015	0.700
18	PK, PM, XM, EG	THA	0.020	-0.015	0.000	-0.001	0.000	0.000	0.000	-0.004	-0.002	0.000	0.176	0.145	0.024	0.700
19	PK, PM, XM, EG	VNM	0.057	-0.017	-0.006	-0.022	0.000	-0.012	-0.060	0.000	0.000	0.000	0.203	0.165	0.028	0.700
20	PK, PM, XM, EG	XSE	0.109	-0.104	-0.001	-0.003	-0.001	0.000	-0.003	0.000	0.000	0.000	0.158	0.128	0.022	0.700
21	PK, PM, XM, EG	BGD	0.227	0.000	-0.085	-0.137	-0.002	0.000	-0.034	0.000	-0.019	0.000	0.199	0.170	0.081	0.700
22	PK, PM, XM, EG	IND	0.030	-0.006	-0.002	-0.005	-0.005	0.000	0.000	-0.017	-0.026	0.000	0.257	0.220	0.105	0.700
23	PK, PM, XM, EG	NPL	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.194	0.381	0.094	0.700
24	PK, PM, XM, EG	PAK	0.144	-0.037	-0.103	-0.004	-0.001	0.000	-0.084	0.000	-0.040	0.000	0.255	0.220	0.104	0.700
25	PK, PM, XM, EG	LKA	0.035	0.000	-0.035	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.326	0.279	0.133	0.700
26	PK, PM, XM, EG	XSA	0.007	0.000	-0.005	-0.002	-0.002	0.000	-0.002	0.000	0.000	0.000	0.284	0.243	0.116	0.700
27	PK, PM, XM, EG	CAN	0.040	0.000	-0.008	-0.025	-0.024	0.000	0.000	-0.007	-0.024	0.000	0.045	0.110	0.122	0.700
28	PK, PM, XM, EG	USA	0.077	-0.001	-0.005	-0.047	-0.002	-0.001	0.000	-0.023	-0.002	0.000	0.064	0.078	0.078	0.700
29	PK, PM, XM, EG	MEX	0.095	-0.001	-0.005	-0.086	-0.031	-0.002	-0.017	-0.001	0.000	0.000	0.115	0.189	0.103	0.700
30	PK, PM, XM, EG	XNA	0.005	0.000	-0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.054	0.113	0.059	0.700
31	PK, PM, XM, EG	ARG	0.483	-0.004	0.000	-0.261	-0.102	-0.210	-0.006	-0.007	0.000	0.000	0.095	0.085	0.085	0.700
32	PK, PM, XM, EG	BOL	0.093	-0.038	-0.051	-0.001	0.000	-0.001	0.000	-0.003	0.000	0.000	0.169	0.277	0.151	0.700
33	PK, PM, XM, EG	BRA	0.060	-0.001	0.000	-0.057	-0.002	-0.001	0.000	0.000	0.000	0.000	0.092	0.135	0.345	0.700
34	PK, PM, XM, EG	CHL	0.032	-0.002	-0.019	-0.007	-0.003	0.000	-0.002	-0.004	-0.003	-0.003	0.102	0.163	0.091	0.700
35	PK, PM, XM, EG	COL	0.013	0.000	0.000	-0.009	0.000	0.000	0.000	-0.004	-0.002	0.000	0.179	0.222	0.160	0.700
36	PK, PM, XM, EG	ECU	0.024	-0.017	-0.004	0.000	0.000	-0.003	-0.005	0.000	0.000	0.000	0.081	0.109	0.072	0.700
37	PK, PM, XM, EG	PRY	0.033	-0.003	-0.014	-0.004	0.000	0.000	0.000	-0.012	-0.001	0.000	0.154	0.184	0.138	0.700
38	PK, PM, XM, EG	PER	0.189	-0.023	-0.111	-0.055	-0.010	0.000	-0.007	0.000	-0.004	0.000	0.175	0.293	0.025	0.700
39	PK, PM, XM, EG	URY	0.041	0.000	0.000	-0.003	-0.004	-0.004	0.000	-0.034	-0.014	-0.002	0.088	0.132	0.079	0.700
40	PK, PM, XM, EG	VEN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.134	0.219	0.120	0.700
41	PK, PM, XM, EG	XSM	0.003	0.000	0.000	-0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.104	0.166	0.093	0.700
42	PK, PM, XM, EG	CRI	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.133	0.174	0.118	0.700
43	PK, PM, XM, EG	GTM	0.008	0.000	0.000	-0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.134	0.218	0.120	0.700
44	PK, PM, XM, EG	HND	0.034	-0.018	0.000	-0.015	-0.001	0.000	0.000	0.000	0.000	0.000	0.059	0.097	0.053	0.700
45	PK, PM, XM, EG	NIC	0.117	-0.110	-0.001	-0.006	-0.001	0.000	0.000	0.000	0.000	0.000	0.182	0.272	0.163	0.700
46	PK, PM, XM, EG	PAN	0.019	-0.011	-0.001	-0.007	0.000	0.000	0.000	0.000	-0.001	0.000	0.179	0.294	0.159	0.700

Table A-3-11. Elasticity of supply for pork, poultry meat, other meat, and eggs (continued).

CNO	Country No.	PID	CID	Country code	P_PK-EG	P_RI	P_WH	P_MZ	P_XG	P_SB	P_XS	P_CS	P_CX	P_SK	A	L	K	H _{t-1}	
		Prod. code			Price of PK-EG	Price of RI	Price of WH	Price of MZ	Price of XG	Price of SB	Price of XS	Price of CS	Price of CX	Price of SK	Land input	Labor input	Capital input	Head t-1	
47	PK, PM, XM, EG		SLV		0.048	0.000	-0.008	-0.040	-0.007	0.000	0.000	0.000	-0.011	0.000	0.085	0.137	0.076	0.700	
48	PK, PM, XM, EG		BLZ		0.016	-0.013	0.000	0.000	0.000	-0.003	-0.003	0.000	0.000	0.000	0.000	0.059	0.092	0.052	0.700
49	PK, PM, XM, EG		DOM		0.015	-0.008	0.000	-0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.190	0.257	0.170	0.700	
50	PK, PM, XM, EG		JAM		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.025	0.126	0.049	0.700	
51	PK, PM, XM, EG		PRI		0.059	0.000	-0.059	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.100	0.135	0.089	0.700	
52	PK, PM, XM, EG		TTO		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.134	0.219	0.120	0.700	
53	PK, PM, XM, EG		XCB		0.148	-0.036	-0.073	-0.037	-0.007	0.000	-0.005	-0.003	0.000	0.000	0.140	0.189	0.125	0.700	
54	PK, PM, XM, EG		AUT		0.065	0.000	-0.014	-0.050	-0.036	0.000	0.000	0.000	-0.002	-0.005	0.082	0.482	0.156	0.700	
55	PK, PM, XM, EG		BEL		0.077	0.000	-0.045	-0.031	-0.017	0.000	0.000	0.000	-0.009	-0.034	0.021	0.123	0.041	0.700	
56	PK, PM, XM, EG		CYP		0.017	-0.001	-0.016	0.000	-0.068	0.000	0.000	0.000	-0.001	0.000	0.084	0.434	0.245	0.700	
57	PK, PM, XM, EG		CZE		0.102	0.000	-0.071	-0.029	-0.070	0.000	0.000	-0.001	-0.015	-0.045	0.115	0.124	0.039	0.700	
58	PK, PM, XM, EG		DNK		0.079	0.000	-0.076	-0.001	-0.061	0.000	0.000	-0.002	-0.009	-0.022	0.045	0.125	0.162	0.700	
59	PK, PM, XM, EG		EST		0.026	0.000	-0.026	0.000	-0.031	0.000	0.000	0.000	-0.003	-0.020	0.140	0.255	0.060	0.700	
60	PK, PM, XM, EG		FIN		0.014	0.000	-0.014	0.000	-0.099	0.000	0.000	0.000	-0.004	-0.024	0.049	0.275	0.093	0.700	
61	PK, PM, XM, EG		FRA		0.104	-0.001	-0.057	-0.046	-0.040	0.000	-0.001	-0.001	-0.006	-0.022	0.051	0.286	0.096	0.700	
62	PK, PM, XM, EG		DEU		0.083	0.000	-0.068	-0.015	-0.047	0.000	0.000	-0.001	-0.001	-0.049	0.056	0.196	0.064	0.700	
63	PK, PM, XM, EG		GRC		0.160	-0.002	-0.006	-0.147	-0.036	0.000	0.000	-0.004	-0.004	-0.001	0.084	0.520	0.161	0.700	
64	PK, PM, XM, EG		HUN		0.154	0.000	-0.042	-0.109	-0.026	0.000	0.000	-0.002	-0.002	-0.016	0.132	0.174	0.045	0.700	
65	PK, PM, XM, EG		IRL		0.035	0.000	-0.034	0.000	-0.069	0.000	0.000	0.000	-0.002	-0.025	0.055	0.338	0.106	0.700	
66	PK, PM, XM, EG		ITA		0.143	-0.001	-0.019	-0.117	-0.021	0.000	0.000	-0.005	-0.002	-0.002	0.057	0.323	0.108	0.700	
67	PK, PM, XM, EG		LVA		0.021	0.000	-0.020	0.000	-0.024	0.000	-0.003	0.000	-0.005	-0.011	0.155	0.317	0.066	0.700	
68	PK, PM, XM, EG		LTU		0.006	0.000	-0.004	-0.001	-0.020	0.000	0.000	0.000	-0.003	-0.001	0.224	0.467	0.096	0.700	
69	PK, PM, XM, EG		LUX		0.077	0.000	-0.045	-0.031	-0.017	0.000	0.000	0.000	-0.009	-0.034	0.021	0.123	0.041	0.700	
70	PK, PM, XM, EG		MLT		0.001	0.000	-0.001	0.000	-0.026	0.000	0.000	0.000	-0.001	0.000	0.036	0.214	0.068	0.700	
71	PK, PM, XM, EG		NLD		0.132	0.000	-0.080	-0.051	-0.060	0.000	-0.001	-0.001	-0.001	-0.025	0.041	0.212	0.078	0.700	
72	PK, PM, XM, EG		POL		0.067	0.000	-0.046	-0.020	-0.116	0.000	-0.001	0.000	-0.006	-0.017	0.185	0.274	0.064	0.700	
73	PK, PM, XM, EG		PRT		0.140	-0.003	-0.029	-0.093	-0.015	0.000	0.000	-0.015	-0.008	-0.043	0.046	0.266	0.087	0.700	
74	PK, PM, XM, EG		SVK		0.143	0.000	-0.059	-0.082	-0.039	0.000	-0.004	-0.002	-0.008	-0.028	0.142	0.138	0.049	0.700	
75	PK, PM, XM, EG		SVN		0.053	0.000	-0.011	-0.043	-0.015	0.000	0.000	0.000	-0.006	-0.027	0.150	0.223	0.051	0.700	
76	PK, PM, XM, EG		ESP		0.139	-0.002	-0.067	-0.042	-0.095	0.000	0.000	-0.028	-0.007	-0.037	0.055	0.316	0.105	0.700	
77	PK, PM, XM, EG		SWE		0.031	0.000	-0.030	0.000	-0.047	0.000	0.000	0.000	-0.005	-0.019	0.057	0.322	0.109	0.700	
78	PK, PM, XM, EG		GBR		0.199	-0.001	-0.197	0.000	-0.069	0.000	0.000	-0.001	-0.002	-0.014	0.088	0.371	0.113	0.700	
79	PK, PM, XM, EG		CHE		0.006	0.000	-0.004	-0.002	-0.003	0.000	0.000	0.000	0.000	0.000	0.105	0.117	0.147	0.700	
80	PK, PM, XM, EG		NOR		0.001	0.000	-0.001	0.000	-0.012	0.000	-0.004	0.000	0.000	0.000	0.127	0.151	0.178	0.700	
81	PK, PM, XM, EG		XEF		0.015	0.000	-0.015	0.000	0.000	0.000	0.000	0.000	0.000	-0.018	0.096	0.113	0.134	0.700	
82	PK, PM, XM, EG		ALB		0.144	-0.001	-0.105	-0.038	-0.004	0.000	0.000	0.000	-0.001	0.000	0.099	0.137	0.034	0.700	
83	PK, PM, XM, EG		BGR		0.059	-0.004	-0.024	-0.031	-0.013	0.000	-0.001	0.000	-0.011	-0.001	0.224	0.301	0.077	0.700	
84	PK, PM, XM, EG		BLR		0.045	-0.010	-0.016	-0.139	-0.098	0.000	-0.004	0.000	-0.001	0.000	0.060	0.124	0.026	0.700	
85	PK, PM, XM, EG		HRV		0.166	0.000	-0.027	-0.109	-0.026	0.000	0.000	0.000	0.000	0.000	0.131	0.190	0.045	0.700	
86	PK, PM, XM, EG		ROU		0.145	-0.001	-0.019	-0.125	-0.025	0.000	0.000	0.000	-0.004	-0.005	0.243	0.364	0.083	0.700	
87	PK, PM, XM, EG		RUS		0.019	-0.001	-0.005	-0.011	-0.038	0.000	-0.002	0.000	0.000	-0.001	0.074	0.154	0.032	0.700	
88	PK, PM, XM, EG		UKR		0.223	0.000	-0.055	-0.167	-0.088	0.000	-0.001	0.000	-0.002	-0.001	0.091	0.188	0.039	0.700	
89	PK, PM, XM, EG		XEE		0.331	-0.001	-0.066	-0.263	-0.042	-0.002	-0.001	0.000	-0.001	-0.002	0.107	0.226	0.046	0.700	
90	PK, PM, XM, EG		XER		0.156	0.000	-0.025	-0.129	-0.014	0.000	0.000	-0.001	0.000	-0.002	0.130	0.203	0.061	0.700	
91	PK, PM, XM, EG		KAZ		0.003	-0.002	-0.001	0.000	0.000	0.000	-0.001	0.000	0.000	0.000	0.122	0.241	0.052	0.700	
92	PK, PM, XM, EG		KGZ		0.065	0.000	-0.064	-0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.200	0.426	0.086	0.700	
93	PK, PM, XM, EG		XSU		0.056	0.000	-0.055	0.000	0.000	0.000	-0.001	0.000	0.000	0.000	0.182	0.359	0.078	0.700	

Table A-3-11. Elasticity of supply for pork, poultry meat, other meat, and eggs (continued).

CNO Country No.	PID Prod. code	CID Country code	P_PK-EG Price of PK-EG	P_RI Price of RI	P_WH Price of WH	P_MZ Price of MZ	P_XG Price of XG	P_SB Price of SB	P_XS Price of XS	P_CS Price of CS	P_CX Price of CX	P_SK Price of SK	A Land input	L Labor input	K Capital input	H _{t-1} Head t-1
94	PK, PM, XM, EG	ARM	0.228	0.000	-0.228	0.000	0.000	0.000	0.000	0.000	-0.010	-0.007	0.102	0.215	0.043	0.700
95	PK, PM, XM, EG	AZE	0.016	-0.002	-0.014	0.000	0.000	0.000	-0.001	0.000	0.000	0.000	0.210	0.446	0.090	0.700
96	PK, PM, XM, EG	GEO	0.055	0.000	-0.054	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.141	0.300	0.061	0.700
97	PK, PM, XM, EG	BHR	0.017	-0.007	-0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.059	0.172	0.172	0.700
98	PK, PM, XM, EG	IRN	0.095	-0.003	-0.053	-0.027	-0.041	-0.012	-0.039	0.000	0.000	-0.001	0.042	0.218	0.124	0.700
99	PK, PM, XM, EG	ISR	0.044	0.000	-0.015	-0.029	-0.014	0.000	-0.031	0.000	0.000	0.000	0.050	0.227	0.145	0.700
100	PK, PM, XM, EG	KWT	0.021	0.000	-0.013	-0.013	-0.001	0.000	0.000	0.000	0.000	0.000	0.035	0.180	0.102	0.700
101	PK, PM, XM, EG	JOR	0.021	0.000	-0.003	-0.019	-0.041	0.000	-0.001	0.000	-0.009	0.000	0.064	0.330	0.187	0.700
102	PK, PM, XM, EG	OMN	0.048	-0.008	-0.040	0.000	-0.072	0.000	0.000	0.000	-0.021	-0.021	0.028	0.143	0.082	0.700
103	PK, PM, XM, EG	QAT	0.012	-0.004	-0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.060	0.272	0.176	0.700
104	PK, PM, XM, EG	SAU	0.044	0.000	-0.018	-0.023	-0.035	0.000	-0.002	-0.003	-0.001	-0.002	0.062	0.317	0.180	0.700
105	PK, PM, XM, EG	TUR	0.050	-0.001	-0.023	-0.023	-0.043	-0.001	-0.020	-0.001	-0.002	0.000	0.050	0.258	0.146	0.700
106	PK, PM, XM, EG	ARE	0.004	0.000	-0.002	-0.001	-0.024	0.000	0.000	0.000	-0.004	-0.003	0.062	0.318	0.180	0.700
107	PK, PM, XM, EG	XWS	0.047	0.000	-0.046	-0.001	-0.002	0.000	-0.005	0.000	0.000	0.000	0.060	0.309	0.175	0.700
108	PK, PM, XM, EG	EGY	0.021	0.000	-0.003	-0.019	-0.041	0.000	-0.001	0.000	-0.009	0.000	0.064	0.330	0.187	0.700
109	PK, PM, XM, EG	MAR	0.046	0.000	-0.039	-0.002	-0.020	0.000	-0.007	-0.004	-0.003	0.000	0.086	0.431	0.250	0.700
110	PK, PM, XM, EG	TUN	0.047	0.000	-0.027	0.000	-0.018	0.000	-0.029	-0.019	0.000	0.000	0.062	0.309	0.179	0.700
111	PK, PM, XM, EG	XNF	0.028	0.000	-0.028	0.000	-0.017	0.000	-0.008	0.000	-0.024	0.000	0.058	0.298	0.169	0.700
112	PK, PM, XM, EG	BEN	0.002	0.000	-0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.107	0.622	0.143	0.700
113	PK, PM, XM, EG	BFA	0.026	-0.001	-0.016	-0.009	-0.021	0.000	0.000	0.000	0.000	0.000	0.114	0.657	0.151	0.700
114	PK, PM, XM, EG	CMR	0.136	-0.006	-0.033	-0.097	-0.071	-0.001	-0.029	0.000	-0.056	0.000	0.053	0.285	0.070	0.700
115	PK, PM, XM, EG	CIV	0.343	0.000	-0.059	-0.284	-0.076	0.000	-0.050	0.000	-0.004	0.000	0.053	0.307	0.071	0.700
116	PK, PM, XM, EG	GHA	0.343	0.000	-0.059	-0.284	-0.076	0.000	-0.050	0.000	-0.004	0.000	0.053	0.307	0.071	0.700
117	PK, PM, XM, EG	GIN	0.025	-0.008	-0.015	-0.002	-0.002	0.000	-0.004	0.000	-0.046	0.000	0.054	0.303	0.069	0.700
118	PK, PM, XM, EG	NGA	0.005	0.000	0.000	-0.004	-0.006	0.000	0.000	0.000	0.000	0.000	0.100	0.583	0.134	0.700
119	PK, PM, XM, EG	SEN	0.021	-0.018	-0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.098	0.524	0.131	0.700
120	PK, PM, XM, EG	TGO	0.188	-0.184	0.000	-0.004	-0.002	0.000	0.000	0.000	0.000	0.000	0.090	0.525	0.121	0.700
121	PK, PM, XM, EG	XWF	0.687	-0.063	-0.622	-0.002	-0.008	0.000	-0.003	0.000	-0.005	0.000	0.063	0.355	0.084	0.700
122	PK, PM, XM, EG	XCF	0.014	-0.009	-0.004	-0.001	-0.002	0.000	0.000	0.000	0.000	0.000	0.086	0.464	0.114	0.700
123	PK, PM, XM, EG	XAC	0.158	0.000	-0.003	-0.155	-0.013	0.000	0.000	0.000	-0.001	-0.002	0.088	0.342	0.142	0.700
124	PK, PM, XM, EG	ETH	0.016	0.000	-0.002	-0.014	-0.025	0.000	0.000	0.000	0.000	0.000	0.109	0.597	0.146	0.700
125	PK, PM, XM, EG	KEN	0.074	0.000	-0.006	-0.068	-0.017	0.000	0.000	0.000	0.000	0.000	0.132	0.468	0.219	0.700
126	PK, PM, XM, EG	MIDG	0.005	0.000	-0.003	-0.001	0.000	0.000	-0.001	0.000	-0.003	0.000	0.054	0.286	0.072	0.700
127	PK, PM, XM, EG	MWI	0.380	0.000	-0.014	-0.366	-0.010	0.000	0.000	0.000	-0.006	0.000	0.064	0.222	0.108	0.700
128	PK, PM, XM, EG	MUS	0.023	0.000	-0.018	-0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.087	0.280	0.145	0.700
129	PK, PM, XM, EG	MOZ	0.049	0.000	-0.018	-0.030	-0.007	0.000	0.000	0.000	0.000	0.000	0.132	0.470	0.220	0.700
130	PK, PM, XM, EG	RWA	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-0.005	0.000	0.113	0.599	0.149	0.700
131	PK, PM, XM, EG	TZA	0.074	0.000	-0.006	-0.068	-0.017	0.000	0.000	0.000	-0.006	0.000	0.132	0.468	0.219	0.700
132	PK, PM, XM, EG	UGA	0.002	0.000	-0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.062	0.330	0.083	0.700
133	PK, PM, XM, EG	ZMB	0.297	0.000	-0.185	-0.112	-0.003	0.000	0.000	0.000	0.000	0.000	0.050	0.176	0.083	0.700
134	PK, PM, XM, EG	ZWE	0.003	-0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.109	0.128	0.098	0.700
135	PK, PM, XM, EG	XEC	0.040	0.000	-0.038	-0.002	-0.144	0.000	0.000	0.000	0.000	0.000	0.047	0.262	0.062	0.700
136	PK, PM, XM, EG	BWA	0.004	0.000	0.000	-0.004	-0.009	0.000	0.000	0.000	0.000	0.000	0.096	0.220	0.354	0.700
137	PK, PM, XM, EG	NAM	0.004	0.000	-0.001	-0.003	-0.002	0.000	0.000	0.000	0.000	-0.002	0.110	0.265	0.412	0.700
138	PK, PM, XM, EG	ZAF	0.023	0.000	-0.003	-0.019	-0.001	0.000	0.000	0.000	0.000	0.000	0.041	0.087	0.152	0.700
139	PK, PM, XM, EG	XSC	0.127	-0.006	0.000	-0.122	-0.012	0.000	-0.023	0.000	-0.047	0.000	0.079	0.171	0.294	0.700
140	PK, PM, XM, EG	XTW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.333	0.167	0.700

Table A-3-12. Elasticity of supply for raw milk.

CNO Country No.	PID Prod. code	CID Country code	P_MK Price of MK	P_RI Price of RI	P_WH Price of WH	P_MZ Price of MZ	P_XG Price of XG	P_SB Price of SB	P_XS Price of XS	P_CS Price of CS	P_CX Price of CX	P_SK Price of SK	A Land input	L Labor input	K Capital input	H _{t-1} Head t-1
1	MK	AUS	0.035	-0.001	0.000	0.000	-0.002	0.000	-0.031	0.000	0.000	-0.001	0.098	0.193	0.131	0.700
2	MK	NZL	0.003	0.000	-0.002	-0.001	-0.001	0.000	0.000	0.000	0.000	0.000	0.068	0.244	0.117	0.700
3	MK	XOC	0.015	-0.001	-0.011	-0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.222	0.156	0.051	0.700
4	MK	CHN	0.134	-0.029	-0.037	-0.062	-0.003	-0.002	-0.007	-0.003	-0.001	0.000	0.189	0.325	0.078	0.700
5	MK	HKG	0.134	-0.029	-0.037	-0.062	-0.003	-0.002	-0.007	-0.003	-0.001	0.000	0.189	0.325	0.078	0.700
6	MK	JPN	0.010	-0.006	0.000	0.000	-0.001	-0.003	0.000	-0.001	-0.001	-0.001	0.078	0.206	0.134	0.700
7	MK	KOR	0.112	-0.111	0.000	0.000	-0.001	0.000	0.000	0.000	0.000	-0.004	0.209	0.140	0.037	0.700
8	MK	MNG	0.026	0.000	-0.026	0.000	-0.001	0.000	0.000	0.000	0.000	0.000	0.215	0.372	0.089	0.700
9	MK	TWN	0.085	-0.002	0.000	-0.023	-0.001	0.000	-0.142	-0.060	-0.001	0.000	0.082	0.099	0.017	0.700
10	MK	XEA	0.027	-0.001	-0.024	-0.001	0.000	-0.001	0.000	0.000	0.000	0.000	0.302	0.303	0.060	0.700
11	MK	BRN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.700
12	MK	KHM	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.700
13	MK	IDN	0.166	-0.149	0.000	-0.016	0.000	-0.001	-0.024	-0.001	-0.001	0.000	0.314	0.257	0.043	0.700
14	MK	LAO	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.700
15	MK	MYS	0.166	-0.149	0.000	-0.016	0.000	-0.001	-0.024	-0.001	-0.001	0.000	0.314	0.257	0.043	0.700
16	MK	PHL	0.085	-0.002	0.000	-0.023	-0.001	0.000	-0.142	-0.060	-0.001	0.000	0.082	0.099	0.017	0.700
17	MK	SGP	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.305	0.246	0.044	0.700
18	MK	THA	0.056	-0.056	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.379	0.311	0.052	0.700
19	MK	VNM	0.056	-0.056	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.379	0.311	0.052	0.700
20	MK	XSE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.700
21	MK	BGD	0.318	-0.313	-0.003	-0.002	0.000	0.000	0.000	0.000	-0.160	0.000	0.146	0.125	0.060	0.700
22	MK	IND	0.008	0.000	0.000	0.000	0.000	0.000	0.000	-0.007	-0.011	0.000	0.352	0.302	0.144	0.700
23	MK	NPL	0.032	-0.032	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.177	0.347	0.085	0.700
24	MK	PAK	0.382	-0.098	-0.283	-0.001	0.000	0.000	-0.062	0.000	-0.029	0.000	0.312	0.269	0.128	0.700
25	MK	LKA	0.016	0.000	-0.016	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.340	0.291	0.139	0.700
26	MK	XSA	0.034	-0.030	-0.003	-0.001	-0.002	0.000	-0.002	0.000	0.000	0.000	0.268	0.230	0.109	0.700
27	MK	CAN	0.039	0.000	-0.004	-0.030	-0.029	0.000	0.000	-0.004	-0.015	0.000	0.060	0.144	0.160	0.700
28	MK	USA	0.640	-0.002	-0.004	-0.615	-0.025	-0.001	0.000	-0.018	-0.002	0.000	0.095	0.116	0.115	0.700
29	MK	MEX	0.113	-0.002	-0.006	-0.103	-0.037	-0.002	-0.019	-0.001	0.000	0.000	0.118	0.194	0.105	0.700
30	MK	XNA	0.005	0.000	-0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.061	0.132	0.066	0.700
31	MK	ARG	0.216	-0.002	-0.002	-0.114	-0.045	-0.097	-0.003	-0.001	0.000	0.000	0.159	0.141	0.142	0.700
32	MK	BOL	0.062	-0.022	-0.032	-0.003	-0.001	-0.003	0.000	-0.003	0.000	0.000	0.155	0.255	0.139	0.700
33	MK	BRA	0.056	-0.002	0.000	-0.051	-0.002	-0.002	0.000	0.000	0.000	0.000	0.094	0.138	0.353	0.700
34	MK	CHL	0.031	-0.002	-0.018	-0.007	-0.003	0.000	-0.002	-0.005	-0.004	-0.004	0.135	0.216	0.121	0.700
35	MK	COL	0.013	0.000	0.000	-0.009	0.000	0.000	0.000	-0.004	-0.002	0.000	0.179	0.179	0.160	0.700
36	MK	ECU	0.016	-0.012	-0.001	0.000	0.000	-0.002	-0.004	0.000	0.000	0.000	0.090	0.121	0.080	0.700
37	MK	PRY	0.025	-0.002	-0.009	-0.003	0.000	0.000	0.000	-0.012	-0.001	0.000	0.177	0.212	0.158	0.700
38	MK	PER	0.212	-0.019	-0.097	-0.094	-0.016	0.000	-0.016	0.000	-0.004	0.000	0.175	0.294	0.025	0.700
39	MK	URY	0.008	0.000	0.000	-0.004	-0.005	-0.004	0.000	0.000	0.000	-0.002	0.197	0.295	0.176	0.700
40	MK	VEN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.082	0.134	0.073	0.700
41	MK	XSM	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.131	0.210	0.117	0.700
42	MK	CRI	0.001	0.000	0.000	0.000	0.000	0.000	-0.087	0.000	0.000	0.000	0.123	0.161	0.109	0.700
43	MK	GTM	0.004	0.000	0.000	0.000	0.000	-0.004	-0.015	0.000	0.000	0.000	0.173	0.282	0.154	0.700
44	MK	HND	0.002	-0.001	-0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.177	0.292	0.158	0.700
45	MK	NIC	0.060	-0.053	0.000	-0.007	-0.001	0.000	0.000	0.000	0.000	0.000	0.183	0.272	0.163	0.700
46	MK	PAN	0.021	-0.012	-0.001	-0.008	0.000	0.000	-0.015	0.000	0.000	0.000	0.193	0.317	0.172	0.700

Table A-3-12. Elasticity of supply for raw milk (continued).

CNO Country No.	PID Prod. code	CID Country code	P_MK Price of MK	P_RI Price of RI	P_WH Price of WH	P_MZ Price of MZ	P_XG Price of XG	P_SB Price of SB	P_XS Price of XS	P_CS Price of CS	P_CX Price of CX	P_SK Price of SK	A Land input	L Labor input	K Capital input	H _{t-1} Head t-1
47	MK	SLV	0.012	0.000	-0.002	-0.010	-0.002	0.000	0.000	0.000	-0.003	0.000	0.183	0.295	0.163	0.700
48	MK	BLZ	0.013	-0.011	0.000	0.000	0.000	-0.003	-0.003	0.000	0.000	0.000	0.069	0.107	0.059	0.700
49	MK	DOM	0.010	-0.006	0.000	-0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.189	0.255	0.169	0.700
50	MK	JAM	0.159	-0.023	-0.068	-0.065	-0.013	0.000	-0.013	-0.003	0.000	0.000	0.145	0.195	0.129	0.700
51	MK	PRI	0.034	0.000	-0.034	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.090	0.122	0.080	0.700
52	MK	TTO	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.082	0.134	0.073	0.700
53	MK	XCB	0.159	-0.023	-0.068	-0.065	-0.013	0.000	-0.013	-0.003	0.000	0.000	0.145	0.195	0.129	0.700
54	MK	AUT	0.054	0.000	-0.011	-0.042	-0.030	0.000	0.000	0.000	-0.004	-0.011	0.053	0.312	0.101	0.700
55	MK	BEL	0.011	0.000	-0.007	-0.003	-0.002	0.000	0.000	0.000	-0.010	-0.034	0.060	0.344	0.114	0.700
56	MK	CYP	0.019	-0.001	-0.018	0.000	-0.110	0.000	0.000	0.000	-0.001	0.000	0.075	0.385	0.217	0.700
57	MK	CZE	0.056	-0.001	-0.040	-0.015	-0.036	0.000	0.000	-0.001	-0.014	0.000	0.194	0.208	0.066	0.700
58	MK	DNK	0.039	-0.001	-0.037	0.000	-0.029	0.000	0.000	-0.001	-0.005	-0.014	0.072	0.203	0.261	0.700
59	MK	EST	0.043	0.000	-0.042	0.000	-0.050	0.000	0.000	0.000	-0.004	-0.027	0.061	0.111	0.026	0.700
60	MK	FIN	0.004	-0.001	-0.004	0.000	-0.034	0.000	0.000	0.000	-0.002	-0.013	0.079	0.447	0.151	0.700
61	MK	FRA	0.056	-0.001	-0.031	-0.023	-0.021	0.000	0.000	-0.001	-0.006	-0.018	0.055	0.307	0.103	0.700
62	MK	DEU	0.018	0.000	-0.011	-0.003	-0.010	0.000	0.000	-0.004	-0.006	-0.028	0.105	0.366	0.119	0.700
63	MK	GRC	0.238	-0.004	-0.006	-0.221	-0.053	0.000	0.000	-0.007	-0.006	-0.002	0.060	0.370	0.115	0.700
64	MK	HUN	0.099	0.000	-0.025	-0.072	-0.017	0.000	0.000	-0.002	-0.015	-0.018	0.222	0.292	0.076	0.700
65	MK	IRL	0.011	0.000	-0.010	0.000	-0.021	0.000	0.000	0.000	-0.002	-0.023	0.075	0.458	0.143	0.700
66	MK	ITA	0.072	-0.002	-0.008	-0.056	-0.010	0.000	0.000	-0.006	0.000	0.000	0.049	0.278	0.093	0.700
67	MK	LVA	0.067	-0.001	-0.064	0.000	-0.082	0.000	-0.004	-0.002	-0.013	-0.030	0.117	0.240	0.050	0.700
68	MK	LTU	0.066	-0.001	-0.059	-0.007	-0.136	0.000	0.000	0.000	-0.002	-0.006	0.085	0.176	0.036	0.700
69	MK	LUX	0.011	0.000	-0.007	-0.003	-0.002	0.000	0.000	-0.010	-0.010	-0.034	0.060	0.344	0.114	0.700
70	MK	MLT	0.072	-0.002	-0.008	-0.056	-0.010	0.000	0.000	-0.006	-0.002	0.000	0.049	0.278	0.093	0.700
71	MK	NLD	0.014	0.000	-0.007	-0.005	-0.006	0.000	-0.001	-0.001	-0.001	-0.013	0.081	0.425	0.155	0.700
72	MK	POL	0.109	-0.001	-0.076	-0.032	-0.183	0.000	-0.001	0.000	-0.003	-0.017	0.144	0.214	0.049	0.700
73	MK	PRT	0.111	-0.004	-0.022	-0.068	-0.011	0.000	0.000	-0.016	-0.008	-0.038	0.055	0.323	0.106	0.700
74	MK	SVK	0.042	0.000	-0.018	-0.022	-0.011	0.000	-0.003	-0.001	-0.003	-0.011	0.282	0.275	0.097	0.700
75	MK	SVN	0.049	0.000	-0.009	-0.040	-0.014	0.000	0.000	0.000	-0.007	-0.025	0.090	0.134	0.031	0.700
76	MK	ESP	0.173	-0.001	-0.089	-0.055	-0.125	0.000	0.000	-0.028	-0.007	-0.038	0.049	0.282	0.093	0.700
77	MK	SWE	0.018	-0.001	-0.017	0.000	-0.024	0.000	0.000	0.000	-0.005	-0.029	0.049	0.278	0.095	0.700
78	MK	GBR	0.096	-0.001	-0.095	0.000	-0.033	0.000	0.000	-0.001	-0.002	-0.017	0.084	0.356	0.109	0.700
79	MK	CHE	0.007	-0.001	-0.004	-0.002	-0.004	0.000	0.000	0.000	0.000	0.000	0.151	0.169	0.213	0.700
80	MK	NOR	0.001	-0.001	0.000	0.000	-0.015	0.000	-0.001	0.000	0.000	0.000	0.144	0.171	0.202	0.700
81	MK	XEF	0.005	0.000	-0.005	0.000	0.000	0.000	0.000	0.000	0.000	-0.012	0.164	0.194	0.231	0.700
82	MK	ALB	0.159	-0.001	-0.122	-0.036	-0.004	0.000	0.000	0.000	-0.001	0.000	0.140	0.195	0.048	0.700
83	MK	BGR	0.119	-0.005	-0.046	-0.068	-0.028	0.000	-0.001	0.000	-0.004	-0.001	0.244	0.328	0.084	0.700
84	MK	BLR	0.100	-0.010	-0.007	-0.084	-0.445	0.000	-0.013	0.000	0.000	0.000	0.040	0.082	0.017	0.700
85	MK	HRV	0.084	0.000	-0.014	-0.070	-0.013	0.000	0.000	0.000	0.000	-0.001	0.135	0.197	0.046	0.700
86	MK	ROU	0.228	-0.001	-0.020	-0.207	-0.041	0.000	0.000	0.000	-0.003	-0.004	0.198	0.296	0.068	0.700
87	MK	RUS	0.023	-0.001	-0.006	-0.014	-0.047	-0.002	-0.002	0.000	0.000	-0.001	0.125	0.258	0.053	0.700
88	MK	UKR	0.166	-0.001	-0.041	-0.124	-0.065	-0.001	-0.001	0.000	-0.002	-0.001	0.155	0.320	0.066	0.700
89	MK	XEE	0.220	-0.001	-0.044	-0.174	-0.028	-0.001	-0.001	0.000	-0.001	-0.002	0.164	0.344	0.070	0.700
90	MK	XER	0.097	0.000	-0.017	-0.078	-0.009	0.000	0.000	-0.001	0.000	-0.003	0.135	0.210	0.063	0.700
91	MK	KAZ	0.003	-0.002	-0.001	0.000	-0.001	0.000	-0.001	0.000	0.000	0.000	0.106	0.209	0.045	0.700
92	MK	KGZ	0.017	0.000	-0.016	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.097	0.207	0.042	0.700
93	MK	XSU	0.014	0.000	-0.013	0.000	0.000	0.000	-0.001	0.000	0.000	0.000	0.088	0.173	0.038	0.700

Table A-3-12. Elasticity of supply for raw milk (continued).

CNO Country No.	PID Prod. code	CID Country code	P_MK Price of MK	P_RI Price of RI	P_WH Price of WH	P_MZ Price of MZ	P_XG Price of XG	P_SB Price of SB	P_XS Price of XS	P_CS Price of CS	P_CX Price of CX	P_SK Price of SK	A Land input	L Labor input	K Capital input	H _{t-1} Head t-1
94	MK	ARM	0.273	0.000	-0.273	0.000	0.000	0.000	0.000	0.000	-0.006	0.000	0.180	0.381	0.077	0.700
95	MK	AZE	0.011	-0.001	-0.010	0.000	0.000	0.000	-0.001	0.000	0.000	0.000	0.153	0.324	0.065	0.700
96	MK	GEO	0.036	0.000	-0.035	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.162	0.343	0.069	0.700
97	MK	BHR	0.009	-0.003	-0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.040	0.120	0.117	0.700
98	MK	IRN	0.090	-0.004	-0.048	-0.023	-0.035	-0.015	-0.048	0.000	0.000	-0.001	0.054	0.278	0.158	0.700
99	MK	ISR	0.159	-0.001	-0.113	-0.041	-0.019	0.000	-0.077	-0.005	-0.001	-0.001	0.039	0.175	0.112	0.700
100	MK	KWT	0.043	0.000	-0.018	-0.025	-0.003	0.000	0.000	-0.001	-0.002	0.000	0.053	0.279	0.157	0.700
101	MK	JOR	0.005	0.000	-0.002	-0.004	-0.008	0.000	-0.042	0.000	-0.003	0.000	0.010	0.046	0.026	0.700
102	MK	OMN	0.023	-0.004	-0.019	0.000	-0.039	0.000	0.000	0.000	-0.016	-0.015	0.021	0.105	0.060	0.700
103	MK	QAT	0.006	-0.002	-0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.045	0.204	0.132	0.700
104	MK	SAU	0.030	0.000	-0.012	-0.015	-0.024	0.000	-0.077	-0.003	0.000	-0.002	0.052	0.269	0.152	0.700
105	MK	TUR	0.050	-0.002	-0.023	-0.023	-0.043	-0.001	-0.020	-0.001	-0.002	0.000	0.062	0.317	0.179	0.700
106	MK	ARE	0.001	0.000	-0.001	0.000	-0.005	0.000	0.000	0.000	-0.001	-0.001	0.008	0.041	0.023	0.700
107	MK	XWS	0.030	-0.001	-0.029	-0.001	-0.002	0.000	-0.042	0.000	-0.003	0.000	0.010	0.046	0.026	0.700
108	MK	EGY	0.005	0.000	-0.002	-0.004	-0.008	0.000	-0.042	0.000	-0.003	0.000	0.089	0.446	0.258	0.700
109	MK	MAR	0.046	0.000	-0.040	-0.003	-0.029	0.000	-0.013	-0.003	-0.003	0.000	0.089	0.446	0.258	0.700
110	MK	TUN	0.008	0.000	-0.007	0.000	-0.007	0.000	-0.012	-0.001	0.000	0.000	0.007	0.036	0.021	0.700
111	MK	XNF	0.012	0.000	-0.012	0.000	-0.008	0.000	-0.004	-0.001	-0.001	-0.001	0.007	0.037	0.021	0.700
112	MK	BEN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.059	0.324	0.059	0.700
113	MK	BFA	0.012	-0.001	-0.001	-0.010	-0.022	0.000	0.000	0.000	0.000	0.000	0.108	0.627	0.144	0.700
114	MK	CMR	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.700
115	MK	CIV	0.125	-0.125	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.042	0.125	0.042	0.700
116	MK	GHA	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.022	0.133	0.031	0.700
117	MK	GIN	0.021	-0.008	-0.011	-0.002	-0.002	0.000	-0.004	0.000	-0.019	0.000	0.079	0.454	0.102	0.700
118	MK	NGA	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.102	0.575	0.132	0.700
119	MK	SEN	0.014	-0.009	-0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.091	0.486	0.121	0.700
120	MK	TGO	0.128	-0.117	0.000	-0.010	-0.004	0.000	0.000	0.000	0.000	0.000	0.088	0.498	0.117	0.700
121	MK	XWF	0.015	-0.004	-0.010	-0.001	-0.003	0.000	-0.001	0.000	-0.001	0.000	0.057	0.322	0.075	0.700
122	MK	XCF	0.008	-0.003	-0.004	-0.001	-0.002	0.000	0.000	0.000	0.000	0.000	0.082	0.445	0.110	0.700
123	MK	XAC	0.020	0.000	-0.001	-0.019	-0.002	0.000	0.000	0.000	-0.001	-0.003	0.095	0.370	0.154	0.700
124	MK	ETH	0.012	0.000	-0.001	-0.010	-0.018	0.000	0.000	0.000	0.000	0.000	0.109	0.594	0.145	0.700
125	MK	KEN	0.007	0.000	-0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.098	0.525	0.131	0.700
126	MK	MDG	0.010	0.000	-0.002	-0.007	0.000	0.000	-0.002	0.000	-0.002	0.000	0.053	0.287	0.072	0.700
127	MK	MWI	0.076	0.000	-0.004	-0.072	-0.002	0.000	0.000	0.000	-0.002	0.000	0.096	0.328	0.159	0.700
128	MK	MUS	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.700
129	MK	MOZ	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.094	0.320	0.156	0.700
130	MK	RWA	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.106	0.565	0.143	0.700
131	MK	TZA	0.062	0.000	-0.013	-0.049	-0.012	0.000	0.000	0.000	-0.002	0.000	0.142	0.502	0.235	0.700
132	MK	UGA	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.082	0.436	0.109	0.700
133	MK	ZMB	0.051	0.000	-0.026	-0.025	-0.001	0.000	0.000	0.000	0.000	0.000	0.084	0.300	0.141	0.700
134	MK	ZWE	0.002	-0.001	0.000	0.000	0.000	0.000	-0.001	0.000	0.000	0.000	0.089	0.105	0.081	0.700
135	MK	XEC	0.022	0.000	-0.021	-0.001	-0.076	0.000	0.000	0.000	0.000	-0.001	0.050	0.281	0.067	0.700
136	MK	BWA	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.118	0.272	0.441	0.700
137	MK	NAM	0.002	0.000	-0.002	-0.002	-0.001	0.000	0.000	0.000	0.000	-0.001	0.094	0.225	0.350	0.700
138	MK	ZAF	0.023	-0.001	-0.002	-0.019	-0.001	0.000	0.000	0.000	0.000	0.000	0.053	0.113	0.197	0.700
139	MK	XSC	0.006	0.000	0.000	-0.006	-0.001	0.000	0.000	0.000	0.000	0.000	0.095	0.204	0.350	0.700
140	MK	XTW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.083	0.250	0.125	0.700

Table A-3-13. Elasticity of rice feed input demand for beef production.

CNO Country No.	QID Quantity code	PID Prod. code	IID Input code	CID Country code	P_BF Price of BF	P_RI Price of RI	P_WH Price of WH	P_MZ Price of MZ	P_XG Price of XG	P_SB Price of SB	P_XS Price of XS	P_CS Price of CS	P_CX Price of CX	P_SK Price of SK	A Land input	L Labor input	K Capital input
1	QDL	BF	RI	AUS	1.037	-1.000	0.000	0.000	-0.002	-0.001	-0.034	0.000	0.000	-0.001	0.105	0.207	0.140
2	QDL	BF	RI	NZL	1.017	-1.000	-0.008	-0.003	-0.006	0.000	0.000	0.000	0.000	0.000	0.051	0.181	0.087
3	QDL	BF	RI	XOC	1.022	-1.001	-0.012	-0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.166	0.117	0.038
4	QDL	BF	RI	CHN	1.104	-1.031	-0.040	-0.018	-0.001	-0.002	-0.007	-0.004	-0.002	0.000	0.204	0.351	0.084
5	QDL	BF	RI	HKG	1.007	-1.001	-0.003	0.000	0.000	0.000	0.000	0.000	-0.004	0.000	0.132	0.137	0.028
6	QDL	BF	RI	JPN	1.026	-1.016	-0.001	0.000	-0.001	-0.004	0.000	-0.002	-0.002	-0.002	0.058	0.155	0.100
7	QDL	BF	RI	KOR	1.076	-1.068	0.000	-0.002	-0.002	0.000	0.000	-0.002	0.000	0.000	0.204	0.137	0.036
8	QDL	BF	RI	MNG	1.005	-1.000	-0.004	0.000	-0.001	0.000	0.000	0.000	0.000	0.000	0.269	0.467	0.111
9	QDL	BF	RI	TWN	1.116	-1.003	0.000	-0.027	-0.001	0.000	-0.013	-0.070	-0.001	0.000	0.096	0.116	0.020
10	QDL	BF	RI	XEA	1.005	-1.000	-0.004	-0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.393	0.396	0.078
11	QDL	BF	RI	BRN	1.000	-1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.083	0.042	0.000
12	QDL	BF	RI	KHM	1.008	-1.006	-0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.461	0.375	0.063
13	QDL	BF	RI	IDN	1.210	-1.186	0.000	-0.010	0.000	0.000	-0.012	0.000	-0.001	0.000	0.388	0.317	0.053
14	QDL	BF	RI	LAO	1.026	-1.020	0.000	-0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.369	0.300	0.051
15	QDL	BF	RI	MYS	1.006	-1.000	0.000	-0.001	0.000	0.000	-0.004	0.000	-0.001	0.000	0.307	0.234	0.042
16	QDL	BF	RI	PHL	1.002	-1.000	-0.001	-0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.298	0.391	0.029
17	QDL	BF	RI	SGP	1.000	-1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.331	0.261	0.042
18	QDL	BF	RI	THA	1.064	-1.064	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.441	0.362	0.060
19	QDL	BF	RI	VNM	1.055	-1.031	-0.002	-0.009	0.000	-0.002	-0.011	0.000	0.000	0.000	0.300	0.244	0.041
20	QDL	BF	RI	XSE	1.027	-1.020	-0.001	-0.004	-0.001	0.000	0.000	0.000	0.000	0.000	0.373	0.304	0.051
21	QDL	BF	RI	BGD	1.568	-1.373	-0.004	-0.001	0.000	0.000	0.000	0.000	-0.190	0.000	0.173	0.149	0.071
22	QDL	BF	RI	IND	1.056	-1.007	-0.003	-0.007	-0.006	0.000	0.000	-0.013	-0.020	0.000	0.172	0.148	0.070
23	QDL	BF	RI	NPL	1.300	-1.299	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.232	0.455	0.112
24	QDL	BF	RI	PAK	1.587	-1.113	-0.330	-0.003	0.000	0.000	-0.099	0.000	-0.042	0.000	0.319	0.275	0.130
25	QDL	BF	RI	LKA	1.024	-1.000	-0.024	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.375	0.321	0.154
26	QDL	BF	RI	XSA	1.274	-1.260	-0.005	-0.002	-0.003	0.000	-0.004	0.000	0.000	0.000	0.325	0.279	0.133
27	QDL	BF	RI	CAN	1.113	-1.000	-0.005	-0.045	-0.043	0.000	0.000	-0.004	-0.015	0.000	0.048	0.116	0.128
28	QDL	BF	RI	USA	1.490	-1.002	-0.004	-0.455	-0.019	-0.001	0.000	-0.009	-0.001	0.000	0.099	0.121	0.120
29	QDL	BF	RI	MEX	1.178	-1.001	-0.007	-0.107	-0.039	-0.002	-0.020	-0.001	-0.001	0.000	0.139	0.228	0.124
30	QDL	BF	RI	XNA	1.000	-1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.047	0.102	0.055
31	QDL	BF	RI	ARG	1.039	-1.000	-0.001	-0.023	-0.009	-0.005	0.000	-0.001	0.000	0.000	0.169	0.149	0.150
32	QDL	BF	RI	BOL	1.068	-1.027	-0.035	-0.001	-0.001	0.000	0.000	0.000	0.000	0.000	0.182	0.298	0.162
33	QDL	BF	RI	BRA	1.050	-1.002	0.000	-0.045	-0.002	-0.001	0.000	0.000	0.000	0.000	0.096	0.141	0.360
34	QDL	BF	RI	CHL	1.048	-1.002	-0.022	-0.008	-0.004	0.000	-0.001	-0.006	-0.005	-0.005	0.166	0.265	0.148
35	QDL	BF	RI	COL	1.015	-1.000	0.000	-0.009	0.000	0.000	0.000	-0.004	-0.002	0.000	0.180	0.222	0.160
36	QDL	BF	RI	ECU	1.025	-1.014	-0.002	0.000	0.000	-0.003	-0.006	0.000	0.000	0.000	0.109	0.147	0.097
37	QDL	BF	RI	PRY	1.025	-1.002	-0.009	-0.002	0.000	0.000	0.000	-0.011	-0.001	0.000	0.169	0.202	0.151
38	QDL	BF	RI	PER	1.259	-1.021	-0.096	-0.102	-0.018	0.000	-0.017	0.000	-0.004	0.000	0.202	0.339	0.029
39	QDL	BF	RI	URY	1.011	-1.000	0.000	-0.004	-0.004	-0.003	0.000	0.000	0.000	-0.002	0.195	0.293	0.174
40	QDL	BF	RI	VEN	1.000	-1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.141	0.231	0.126
41	QDL	BF	RI	XSM	1.009	-1.000	0.000	0.000	0.000	0.000	-0.009	0.000	0.000	0.000	0.160	0.255	0.143
42	QDL	BF	RI	CRI	1.000	-1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.172	0.227	0.154
43	QDL	BF	RI	GTM	1.018	-1.000	0.000	0.000	0.000	-0.004	-0.014	0.000	0.000	-0.002	0.166	0.271	0.148
44	QDL	BF	RI	HND	1.003	-1.000	-0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.179	0.295	0.160
45	QDL	BF	RI	NIC	1.064	-1.058	0.000	-0.005	-0.001	0.000	0.000	0.000	0.000	0.000	0.196	0.293	0.175
46	QDL	BF	RI	PAN	1.020	-1.003	0.000	-0.002	0.000	0.000	-0.001	0.000	-0.014	0.000	0.135	0.222	0.121

Table A-3-13. Elasticity of rice feed input demand for beef production (continued).

CNO Country No.	QID Quantity code	PID Prod. code	IID Input code	CID Country code	P_BF Price of BF	P_RI Price of RI	P_WH Price of WH	P_MZ Price of MZ	P_XG Price of XG	P_SB Price of SB	P_XS Price of XS	P_CS Price of CS	P_CX Price of CX	P_SK Price of SK	A Land input	L Labor input	K Capital input
47	QDL	BF	RI	SLV	1.026	-1.000	-0.002	-0.018	-0.003	0.000	0.000	0.000	-0.003	0.000	0.201	0.324	0.180
48	QDL	BF	RI	BLZ	1.014	-1.014	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.082	0.123	0.068
49	QDL	BF	RI	DOM	1.011	-1.006	0.000	-0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.199	0.269	0.178
50	QDL	BF	RI	JAM	1.011	-1.000	-0.005	0.000	0.000	0.000	0.000	0.000	-0.007	0.000	0.048	0.236	0.092
51	QDL	BF	RI	PRI	1.049	-1.000	-0.049	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.134	0.182	0.120
52	QDL	BF	RI	TTO	1.000	-1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.098	0.141	0.087
53	QDL	BF	RI	XCB	1.182	-1.024	-0.063	-0.067	-0.013	0.000	-0.011	-0.003	0.000	0.000	0.165	0.223	0.148
54	QDL	BF	RI	AUT	1.034	-1.000	-0.004	-0.015	-0.011	0.000	0.000	0.000	-0.003	-0.003	0.018	0.103	0.033
55	QDL	BF	RI	BEL	1.024	-1.000	-0.006	-0.003	-0.001	0.000	0.000	0.000	-0.012	-0.010	0.016	0.095	0.031
56	QDL	BF	RI	CYP	1.265	-1.001	-0.033	0.000	-0.230	0.000	0.000	0.000	-0.001	0.000	0.077	0.398	0.225
57	QDL	BF	RI	CZE	1.124	-1.001	-0.046	-0.020	-0.048	0.000	-0.001	-0.001	-0.010	-0.036	0.054	0.058	0.018
58	QDL	BF	RI	DNK	1.089	-1.000	-0.045	-0.001	-0.036	0.000	0.000	-0.001	-0.005	-0.007	0.023	0.066	0.085
59	QDL	BF	RI	EST	1.071	-1.000	-0.029	0.000	-0.037	0.000	0.000	0.000	-0.004	-0.016	0.029	0.054	0.012
60	QDL	BF	RI	FIN	1.140	-1.000	-0.012	0.000	-0.125	0.000	0.000	0.000	-0.003	-0.007	0.017	0.093	0.031
61	QDL	BF	RI	FRA	1.036	-1.001	-0.012	-0.010	-0.008	0.000	-0.001	-0.001	-0.004	-0.004	0.022	0.123	0.041
62	QDL	BF	RI	DEU	1.014	-1.000	-0.004	-0.002	-0.005	0.000	0.000	0.000	-0.002	-0.006	0.038	0.132	0.043
63	QDL	BF	RI	GRC	1.169	-1.004	-0.003	-0.121	-0.029	0.000	0.000	-0.006	-0.006	-0.002	0.061	0.378	0.117
64	QDL	BF	RI	HUN	1.124	-1.000	-0.025	-0.071	-0.017	0.000	0.000	-0.001	-0.010	-0.007	0.070	0.093	0.024
65	QDL	BF	RI	IRL	1.031	-1.000	-0.009	0.000	-0.018	0.000	0.000	0.000	-0.003	-0.009	0.049	0.301	0.094
66	QDL	BF	RI	ITA	1.125	-1.002	-0.012	-0.086	-0.016	0.000	0.000	-0.007	-0.003	0.000	0.017	0.097	0.033
67	QDL	BF	RI	LVA	1.022	-1.000	-0.006	0.000	-0.008	0.000	-0.004	0.000	-0.003	-0.016	0.034	0.071	0.015
68	QDL	BF	RI	LTU	1.182	-1.000	-0.064	-0.006	-0.109	0.000	0.000	0.000	-0.003	-0.003	0.092	0.190	0.040
69	QDL	BF	RI	LUX	1.024	-1.000	-0.006	-0.003	-0.001	0.000	0.000	0.000	-0.012	-0.010	0.016	0.095	0.031
70	QDL	BF	RI	MLT	1.125	-1.002	-0.012	-0.086	-0.016	0.000	0.000	-0.007	-0.003	0.000	0.017	0.097	0.033
71	QDL	BF	RI	NLD	1.022	-1.000	-0.008	-0.005	-0.006	0.000	-0.001	-0.001	-0.001	-0.008	0.051	0.268	0.098
72	QDL	BF	RI	POL	1.319	-1.001	-0.072	-0.036	-0.207	0.000	-0.001	0.000	-0.003	-0.018	0.055	0.081	0.019
73	QDL	BF	RI	PRK	1.100	-1.003	-0.017	-0.049	-0.008	0.000	0.000	-0.015	-0.008	-0.012	0.020	0.117	0.038
74	QDL	BF	RI	SVK	1.051	-1.000	-0.014	-0.016	-0.008	0.000	-0.004	-0.002	-0.007	-0.008	0.142	0.138	0.048
75	QDL	BF	RI	SVN	1.060	-1.000	-0.008	-0.034	-0.012	0.000	0.000	0.000	-0.006	-0.006	0.110	0.163	0.038
76	QDL	BF	RI	ESP	1.180	-1.002	-0.039	-0.032	-0.073	0.000	0.000	-0.027	-0.007	-0.017	0.042	0.242	0.080
77	QDL	BF	RI	SWE	1.055	-1.000	-0.018	0.000	-0.031	0.000	0.000	0.000	-0.004	-0.006	0.016	0.090	0.031
78	QDL	BF	RI	GBR	1.042	-1.001	-0.026	0.000	-0.012	0.000	0.000	-0.001	-0.002	-0.006	0.066	0.279	0.085
79	QDL	BF	RI	CHE	1.011	-1.000	-0.004	-0.002	-0.004	0.000	0.000	0.000	0.000	0.000	0.163	0.182	0.230
80	QDL	BF	RI	NOR	1.024	-1.000	0.000	0.000	-0.019	0.000	-0.003	0.000	0.000	0.000	0.190	0.226	0.267
81	QDL	BF	RI	XEF	1.009	-1.000	-0.009	0.000	0.000	0.000	0.000	0.000	0.000	-0.003	0.022	0.028	0.031
82	QDL	BF	RI	ALB	1.076	-1.000	-0.056	-0.017	-0.002	0.000	0.000	0.000	0.000	0.000	0.143	0.199	0.049
83	QDL	BF	RI	BGR	1.111	-1.009	-0.031	-0.045	-0.019	0.000	-0.001	0.000	-0.006	-0.001	0.107	0.144	0.037
84	QDL	BF	RI	BLR	1.532	-1.019	-0.008	-0.080	-0.422	0.000	-0.003	0.000	0.000	0.000	0.039	0.081	0.017
85	QDL	BF	RI	HRV	1.066	-1.000	-0.011	-0.046	-0.009	0.000	0.000	0.000	0.000	0.000	0.097	0.141	0.033
86	QDL	BF	RI	ROU	1.407	-1.001	-0.028	-0.311	-0.061	0.000	0.000	0.000	-0.005	-0.005	0.093	0.140	0.032
87	QDL	BF	RI	RUS	1.080	-1.001	-0.007	-0.015	-0.052	0.000	-0.002	0.000	0.000	-0.002	0.131	0.271	0.056
88	QDL	BF	RI	UKR	1.164	-1.000	-0.028	-0.086	-0.046	0.000	-0.001	0.000	-0.002	-0.001	0.097	0.200	0.041
89	QDL	BF	RI	XEE	1.206	-1.000	-0.036	-0.143	-0.023	0.000	-0.001	-0.001	-0.002	-0.002	0.121	0.253	0.051
90	QDL	BF	RI	XER	1.090	-1.000	-0.013	-0.067	-0.008	0.000	0.000	0.000	-0.001	-0.001	0.100	0.156	0.047
91	QDL	BF	RI	KAZ	1.004	-1.001	-0.001	0.000	-0.001	0.000	-0.001	0.000	0.000	0.000	0.098	0.194	0.042
92	QDL	BF	RI	KGZ	1.022	-1.000	-0.021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.121	0.257	0.052
93	QDL	BF	RI	XSU	1.019	-1.000	-0.018	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.111	0.219	0.048

Table A-3-13. Elasticity of rice feed input demand for beef production (continued).

CNO No.	QID Quantity code	PID Prod. code	IID Input code	CID Country code	P.BF Price of BF	P.RI Price of RI	P.WH Price of WH	P.MZ Price of MZ	P.XG Price of XG	P.SB Price of SB	P.XS Price of XS	P.CS Price of CS	P.CX Price of CX	P.SK Price of SK	A Land input	L Labor input	K Capital input
94	QDL	BF	RI	ARM	1.215	-1.000	-0.206	0.000	0.000	0.000	0.000	0.000	-0.009	-0.006	0.123	0.262	0.053
95	QDL	BF	RI	AZE	1.020	-1.001	-0.015	0.000	0.000	0.000	-0.003	0.000	0.000	0.000	0.201	0.426	0.086
96	QDL	BF	RI	GEO	1.036	-1.000	-0.036	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.153	0.325	0.066
97	QDL	BF	RI	BHR	1.017	-1.008	-0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.059	0.185	0.176
98	QDL	BF	RI	IRN	1.212	-1.004	-0.053	-0.033	-0.050	-0.017	-0.055	-0.002	0.000	-0.001	0.047	0.243	0.137
99	QDL	BF	RI	ISR	1.229	-1.000	-0.119	-0.038	-0.018	0.000	-0.050	-0.002	0.000	0.000	0.066	0.302	0.193
100	QDL	BF	RI	KWT	1.036	-1.000	-0.066	-0.013	-0.002	0.000	0.000	-0.004	-0.011	0.000	0.039	0.198	0.113
101	QDL	BF	RI	JOR	1.098	-1.000	-0.001	-0.026	-0.058	0.000	-0.004	0.000	-0.010	0.000	0.070	0.359	0.204
102	QDL	BF	RI	OMN	1.125	-1.009	-0.028	0.000	-0.065	0.000	0.000	0.000	-0.023	-0.023	0.037	0.181	0.102
103	QDL	BF	RI	QAT	1.009	-1.003	-0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.085	0.383	0.249
104	QDL	BF	RI	SAU	1.083	-1.000	-0.017	-0.022	-0.034	0.000	-0.007	-0.003	-0.001	-0.002	0.075	0.383	0.217
105	QDL	BF	RI	TUR	1.129	-1.002	-0.026	-0.026	-0.048	-0.001	-0.022	-0.002	-0.003	0.000	0.068	0.349	0.197
106	QDL	BF	RI	ARE	1.052	-1.000	-0.001	-0.003	-0.042	0.000	0.000	-0.001	-0.007	-0.005	0.076	0.392	0.222
107	QDL	BF	RI	XWS	1.048	-1.000	-0.035	-0.001	-0.003	0.000	-0.008	0.000	0.000	0.000	0.062	0.320	0.182
108	QDL	BF	RI	EGY	1.098	-1.000	-0.001	-0.026	-0.058	0.000	-0.004	0.000	-0.010	0.000	0.070	0.359	0.204
109	QDL	BF	RI	MAR	1.047	-1.000	-0.023	-0.001	-0.011	0.000	-0.005	-0.004	-0.003	0.000	0.093	0.469	0.272
110	QDL	BF	RI	TUN	1.067	-1.000	-0.019	0.000	-0.018	0.000	-0.012	-0.018	-0.003	0.000	0.067	0.338	0.196
111	QDL	BF	RI	XNF	1.066	-1.000	-0.021	0.000	-0.018	0.000	-0.003	0.000	-0.023	0.000	0.065	0.333	0.189
112	QDL	BF	RI	BEN	1.000	-1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.070	0.404	0.094
113	QDL	BF	RI	BFA	1.035	-1.001	-0.005	-0.009	-0.020	0.000	0.000	0.000	0.000	0.000	0.112	0.649	0.149
114	QDL	BF	RI	CMR	1.065	-1.001	-0.014	-0.016	-0.011	0.000	-0.009	0.000	-0.013	0.000	0.092	0.494	0.122
115	QDL	BF	RI	CIV	1.296	-1.000	-0.174	-0.093	-0.025	0.000	0.000	0.000	-0.003	0.000	0.111	0.641	0.146
116	QDL	BF	RI	GHA	1.296	-1.000	-0.174	-0.093	-0.025	0.000	0.000	0.000	-0.003	0.000	0.111	0.641	0.146
117	QDL	BF	RI	GIN	1.047	-1.006	-0.007	-0.002	-0.002	0.000	-0.002	0.000	-0.029	0.000	0.097	0.563	0.130
118	QDL	BF	RI	NGA	1.009	-1.000	0.000	-0.003	-0.004	0.000	-0.001	0.000	0.000	0.000	0.113	0.657	0.151
119	QDL	BF	RI	SEN	1.012	-1.011	-0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.103	0.553	0.138
120	QDL	BF	RI	TGO	1.133	-1.129	-0.003	-0.003	-0.001	0.000	0.000	0.000	0.000	0.000	0.085	0.494	0.114
121	QDL	BF	RI	XWF	1.158	-1.016	-0.136	-0.001	-0.004	0.000	-0.001	0.000	-0.001	0.000	0.067	0.381	0.089
122	QDL	BF	RI	XCF	1.005	-1.003	-0.001	0.000	-0.001	0.000	0.000	0.000	0.000	0.000	0.094	0.505	0.125
123	QDL	BF	RI	XAC	1.009	-1.000	-0.001	-0.007	-0.001	0.000	0.000	0.000	-0.001	-0.003	0.112	0.433	0.180
124	QDL	BF	RI	ETH	1.031	-1.000	-0.001	-0.011	-0.019	0.000	0.000	0.000	0.000	0.000	0.105	0.576	0.140
125	QDL	BF	RI	KEN	1.008	-1.000	-0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.065	0.349	0.087
126	QDL	BF	RI	MDG	1.015	-1.000	-0.002	-0.002	0.000	0.000	-0.001	0.000	0.000	0.000	0.054	0.286	0.072
127	QDL	BF	RI	MWI	1.042	-1.000	-0.002	-0.034	-0.001	0.000	0.000	0.000	-0.005	0.000	0.114	0.391	0.190
128	QDL	BF	RI	MUS	1.015	-1.000	-0.008	-0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.076	0.235	0.121
129	QDL	BF	RI	MOZ	1.000	-1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.104	0.376	0.175
130	QDL	BF	RI	RWA	1.003	-1.000	0.000	0.000	0.000	0.000	0.000	0.000	-0.003	0.000	0.113	0.608	0.152
131	QDL	BF	RI	TZA	1.085	-1.000	-0.006	-0.058	-0.015	0.000	0.000	0.000	-0.006	0.000	0.133	0.474	0.222
132	QDL	BF	RI	UGA	1.000	-1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.048	0.257	0.064
133	QDL	BF	RI	ZMB	1.038	-1.000	-0.027	-0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.088	0.313	0.147
134	QDL	BF	RI	ZWE	1.002	-1.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.091	0.106	0.082
135	QDL	BF	RI	XEC	1.074	-1.000	-0.018	-0.001	-0.055	0.000	0.000	0.000	0.000	0.000	0.044	0.249	0.059
136	QDL	BF	RI	BWA	1.001	-1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.106	0.244	0.394
137	QDL	BF	RI	NAM	1.002	-1.000	0.000	-0.001	-0.001	0.000	0.000	0.000	0.000	-0.001	0.110	0.263	0.406
138	QDL	BF	RI	ZAF	1.025	-1.000	-0.003	-0.020	-0.001	-0.001	0.000	0.000	0.000	0.000	0.057	0.121	0.211
139	QDL	BF	RI	XSC	1.013	-1.000	0.000	-0.006	-0.001	0.000	-0.002	0.000	-0.003	0.000	0.110	0.235	0.405
140	QDL	BF	RI	XTW	1.000	-1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.063	0.125	0.063

Note: The tables of elasticities of WH, MZ, XG, SB, XS, CS, CX, and SK feed input demand for beef production are omitted. Furthermore, the tables of elasticities of feed input demand of livestock productions except beef, i.e., SH, PK, XM, EM, EG, and MK are also omitted.

Table A-3-14. Elasticity of supply for dairy products.

CNO	QID	PID	PID	PID	CID	P_SK, BT, CH	P_MK	L	K	Q _{t-1}
Country No.	Quantity code	Prod. code	Prod. code	Prod. code	Country code	Price of SK, BT, CH	Price of MK	Labor input	Capital input	Prod. t-1
1	Q	SK	BT	CH	AUS	0.292	-0.292	0.130	0.134	0.800
2	Q	SK	BT	CH	NZL	0.292	-0.292	0.130	0.134	0.800
3	Q	SK	BT	CH	XOC	0.292	-0.292	0.130	0.134	0.800
4	Q	SK	BT	CH	CHN	0.564	-0.564	0.057	0.112	0.800
5	Q	SK	BT	CH	HKG	0.002	-0.002	0.150	0.229	0.800
6	Q	SK	BT	CH	JPN	0.267	-0.267	0.111	0.179	0.800
7	Q	SK	BT	CH	KOR	0.322	-0.322	0.068	0.124	0.800
8	Q	SK	BT	CH	MNG	0.564	-0.564	0.057	0.112	0.800
9	Q	SK	BT	CH	TWN	0.540	-0.540	0.157	0.098	0.800
10	Q	SK	BT	CH	XEA	0.417	-0.417	0.110	0.190	0.800
11	Q	SK	BT	CH	BRN	0.000	0.000	0.000	0.000	0.800
12	Q	SK	BT	CH	KHM	0.000	0.000	0.060	0.076	0.800
13	Q	SK	BT	CH	IDN	0.032	-0.032	0.157	0.125	0.800
14	Q	SK	BT	CH	LAO	0.000	0.000	0.129	0.194	0.800
15	Q	SK	BT	CH	MYS	0.025	-0.025	0.020	0.124	0.800
16	Q	SK	BT	CH	PHL	0.003	-0.003	0.066	0.235	0.800
17	Q	SK	BT	CH	SGP	0.001	-0.001	0.060	0.117	0.800
18	Q	SK	BT	CH	THA	0.098	-0.098	0.072	0.254	0.800
19	Q	SK	BT	CH	VNM	0.001	-0.001	0.110	0.113	0.800
20	Q	SK	BT	CH	XSE	0.000	0.000	0.121	0.187	0.800
21	Q	SK	BT	CH	BGD	0.001	-0.001	0.098	0.056	0.800
22	Q	SK	BT	CH	IND	0.265	-0.265	0.143	0.052	0.800
23	Q	SK	BT	CH	NPL	0.265	-0.265	0.143	0.052	0.800
24	Q	SK	BT	CH	PAK	0.000	0.000	0.028	0.531	0.800
25	Q	SK	BT	CH	LKA	0.349	-0.349	0.062	0.473	0.800
26	Q	SK	BT	CH	XSA	0.265	-0.265	0.143	0.052	0.800
27	Q	SK	BT	CH	CAN	0.431	-0.431	0.105	0.164	0.800
28	Q	SK	BT	CH	USA	0.462	-0.462	0.179	0.143	0.800
29	Q	SK	BT	CH	MEX	0.249	-0.249	0.083	0.364	0.800
30	Q	SK	BT	CH	XNA	0.383	-0.383	0.111	0.143	0.800
31	Q	SK	BT	CH	ARG	0.615	-0.615	0.093	0.059	0.800
32	Q	SK	BT	CH	BOL	0.230	-0.230	0.150	0.290	0.800
33	Q	SK	BT	CH	BRA	0.547	-0.547	0.173	0.141	0.800
34	Q	SK	BT	CH	CHL	0.254	-0.254	0.093	0.287	0.800
35	Q	SK	BT	CH	COL	0.574	-0.574	0.142	0.237	0.800
36	Q	SK	BT	CH	ECU	0.440	-0.440	0.124	0.279	0.800
37	Q	SK	BT	CH	PRY	0.213	-0.213	0.064	0.083	0.800
38	Q	SK	BT	CH	PER	0.479	-0.479	0.135	0.206	0.800
39	Q	SK	BT	CH	URY	0.599	-0.599	0.269	0.221	0.800
40	Q	SK	BT	CH	VEN	0.445	-0.445	0.210	0.253	0.800
41	Q	SK	BT	CH	XSM	0.437	-0.437	0.128	0.133	0.800
42	Q	SK	BT	CH	CRI	0.626	-0.626	0.136	0.122	0.800
43	Q	SK	BT	CH	GTM	0.224	-0.224	0.180	0.241	0.800
44	Q	SK	BT	CH	HND	0.544	-0.544	0.164	0.130	0.800
45	Q	SK	BT	CH	NIC	0.544	-0.544	0.164	0.130	0.800
46	Q	SK	BT	CH	PAN	0.024	-0.024	0.067	0.171	0.800
47	Q	SK	BT	CH	SLV	0.560	-0.560	0.259	0.194	0.800
48	Q	SK	BT	CH	BLZ	0.369	-0.369	0.126	0.233	0.800
49	Q	SK	BT	CH	DOM	0.433	-0.433	0.102	0.488	0.800
50	Q	SK	BT	CH	JAM	0.041	-0.041	0.068	0.114	0.800
51	Q	SK	BT	CH	PRI	0.049	-0.049	0.090	0.076	0.800
52	Q	SK	BT	CH	TTO	0.179	-0.179	0.065	0.054	0.800
53	Q	SK	BT	CH	XCB	0.469	-0.469	0.116	0.205	0.800
54	Q	SK	BT	CH	AUT	0.238	-0.238	0.058	0.088	0.800
55	Q	SK	BT	CH	BEL	0.120	-0.120	0.073	0.112	0.800
56	Q	SK	BT	CH	CYP	0.238	-0.238	0.043	0.059	0.800
57	Q	SK	BT	CH	CZE	0.176	-0.176	0.078	0.143	0.800
58	Q	SK	BT	CH	DNK	0.248	-0.248	0.111	0.087	0.800
59	Q	SK	BT	CH	EST	0.106	-0.106	0.102	0.092	0.800
60	Q	SK	BT	CH	FIN	0.266	-0.266	0.064	0.061	0.800
61	Q	SK	BT	CH	FRA	0.220	-0.220	0.042	0.065	0.800
62	Q	SK	BT	CH	DEU	0.301	-0.301	0.073	0.090	0.800
63	Q	SK	BT	CH	GRC	0.215	-0.215	0.066	0.099	0.800
64	Q	SK	BT	CH	HUN	0.122	-0.122	0.084	0.092	0.800
65	Q	SK	BT	CH	IRL	0.323	-0.323	0.041	0.059	0.800
66	Q	SK	BT	CH	ITA	0.160	-0.160	0.086	0.085	0.800
67	Q	SK	BT	CH	LVA	0.076	-0.076	0.060	0.487	0.800
68	Q	SK	BT	CH	LTU	0.138	-0.138	0.086	0.105	0.800
69	Q	SK	BT	CH	LUX	0.108	-0.108	0.012	0.235	0.800
70	Q	SK	BT	CH	MLT	0.352	-0.352	0.099	0.115	0.800
71	Q	SK	BT	CH	NLD	0.282	-0.282	0.055	0.094	0.800
72	Q	SK	BT	CH	POL	0.087	-0.087	0.141	0.173	0.800

Table A-3-14. Elasticity of supply for dairy products (continued).

CNO	QID	PID	PID	PID	CID	P_SK, BT, CH	P_MK	L	K	Q _{t-1}
Country No.	Quantity code	Prod. code	Prod. code	Prod. code	Country code	Price of SK, BT, CH	Price of MK	Labor input	Capital input	Prod. t-1
73	Q	SK	BT	CH	PRT	0.182	-0.182	0.070	0.091	0.800
74	Q	SK	BT	CH	SVK	0.078	-0.078	0.093	0.078	0.800
75	Q	SK	BT	CH	SVN	0.133	-0.133	0.046	0.169	0.800
76	Q	SK	BT	CH	ESP	0.166	-0.166	0.090	0.101	0.800
77	Q	SK	BT	CH	SWE	0.184	-0.184	0.069	0.088	0.800
78	Q	SK	BT	CH	GBR	0.227	-0.227	0.121	0.107	0.800
79	Q	SK	BT	CH	CHE	0.185	-0.185	0.089	0.105	0.800
80	Q	SK	BT	CH	NOR	0.242	-0.242	0.113	0.118	0.800
81	Q	SK	BT	CH	XEF	0.221	-0.221	0.061	0.112	0.800
82	Q	SK	BT	CH	ALB	0.644	-0.644	0.058	0.512	0.800
83	Q	SK	BT	CH	BGR	0.140	-0.140	0.035	0.038	0.800
84	Q	SK	BT	CH	BLR	0.119	-0.119	0.086	0.112	0.800
85	Q	SK	BT	CH	HRV	0.248	-0.248	0.110	0.051	0.800
86	Q	SK	BT	CH	ROU	0.033	-0.033	0.035	0.057	0.800
87	Q	SK	BT	CH	RUS	0.011	-0.011	0.106	0.171	0.800
88	Q	SK	BT	CH	UKR	0.076	-0.076	0.100	0.065	0.800
89	Q	SK	BT	CH	XEE	0.068	-0.068	0.091	0.057	0.800
90	Q	SK	BT	CH	XER	0.227	-0.227	0.066	0.160	0.800
91	Q	SK	BT	CH	KAZ	0.062	-0.062	0.092	0.132	0.800
92	Q	SK	BT	CH	KGZ	0.660	-0.660	0.047	0.053	0.800
93	Q	SK	BT	CH	XSU	0.386	-0.386	0.060	0.089	0.800
94	Q	SK	BT	CH	ARM	0.126	-0.126	0.223	0.133	0.800
95	Q	SK	BT	CH	AZE	0.934	-0.934	0.052	0.136	0.800
96	Q	SK	BT	CH	GEO	0.386	-0.386	0.126	0.069	0.800
97	Q	SK	BT	CH	BHR	0.053	-0.053	0.139	0.176	0.800
98	Q	SK	BT	CH	IRN	0.191	-0.191	0.227	0.324	0.800
99	Q	SK	BT	CH	ISR	0.222	-0.222	0.300	0.041	0.800
100	Q	SK	BT	CH	KWT	0.004	-0.004	0.066	0.235	0.800
101	Q	SK	BT	CH	JOR	0.831	-0.831	0.155	0.229	0.800
102	Q	SK	BT	CH	OMN	0.085	-0.085	0.079	0.126	0.800
103	Q	SK	BT	CH	QAT	0.095	-0.095	0.234	0.281	0.800
104	Q	SK	BT	CH	SAU	0.053	-0.053	0.139	0.176	0.800
105	Q	SK	BT	CH	TUR	0.191	-0.191	0.227	0.324	0.800
106	Q	SK	BT	CH	ARE	0.687	-0.687	0.109	0.162	0.800
107	Q	SK	BT	CH	XWS	0.674	-0.674	0.084	0.121	0.800
108	Q	SK	BT	CH	EGY	0.006	-0.006	0.339	0.188	0.800
109	Q	SK	BT	CH	MAR	0.334	-0.334	0.376	0.260	0.800
110	Q	SK	BT	CH	TUN	0.459	-0.459	0.015	0.054	0.800
111	Q	SK	BT	CH	XNF	0.301	-0.301	0.014	0.038	0.800
112	Q	SK	BT	CH	BEN	0.120	-0.120	0.139	0.265	0.800
113	Q	SK	BT	CH	BFA	0.042	-0.042	0.009	0.478	0.800
114	Q	SK	BT	CH	CMR	0.002	-0.002	0.073	0.165	0.800
115	Q	SK	BT	CH	CIV	0.230	-0.230	0.068	0.135	0.800
116	Q	SK	BT	CH	GHA	0.008	-0.008	0.255	0.189	0.800
117	Q	SK	BT	CH	GIN	0.001	-0.001	0.004	0.450	0.800
118	Q	SK	BT	CH	NGA	0.000	0.000	0.417	0.280	0.800
119	Q	SK	BT	CH	SEN	0.815	-0.815	0.028	0.153	0.800
120	Q	SK	BT	CH	TGO	0.046	-0.046	0.077	0.092	0.800
121	Q	SK	BT	CH	XWF	0.378	-0.378	0.051	0.345	0.800
122	Q	SK	BT	CH	XCF	0.176	-0.176	0.044	0.154	0.800
123	Q	SK	BT	CH	XAC	0.049	-0.049	0.043	0.159	0.800
124	Q	SK	BT	CH	ETH	0.114	-0.114	0.027	0.071	0.800
125	Q	SK	BT	CH	KEN	0.086	-0.086	0.116	0.321	0.800
126	Q	SK	BT	CH	MDG	0.006	-0.006	0.139	0.157	0.800
127	Q	SK	BT	CH	MWI	0.000	0.000	0.037	0.204	0.800
128	Q	SK	BT	CH	MUS	0.005	-0.005	0.048	0.070	0.800
129	Q	SK	BT	CH	MOZ	0.000	0.000	0.131	0.240	0.800
130	Q	SK	BT	CH	RWA	0.000	0.000	0.075	0.075	0.800
131	Q	SK	BT	CH	TZA	0.001	-0.001	0.107	0.629	0.800
132	Q	SK	BT	CH	UGA	0.086	-0.086	0.116	0.321	0.800
133	Q	SK	BT	CH	ZMB	0.100	-0.100	0.084	0.078	0.800
134	Q	SK	BT	CH	ZWE	0.100	-0.100	0.084	0.078	0.800
135	Q	SK	BT	CH	XEC	0.286	-0.286	0.112	0.054	0.800
136	Q	SK	BT	CH	BWA	0.028	-0.028	0.186	0.207	0.800
137	Q	SK	BT	CH	NAM	0.051	-0.051	0.053	0.160	0.800
138	Q	SK	BT	CH	ZAF	0.100	-0.100	0.084	0.078	0.800
139	Q	SK	BT	CH	XSC	0.046	-0.046	0.040	0.157	0.800
140	Q	SK	BT	CH	XTW	0.265	-0.265	0.143	0.052	0.800

Table A-3-15. Elasticity of input demand for dairy products.

CNO	QID	PID	PID	PID	IID	CID	P_SK, BT, CH	P_MK	L	K
Country No.	Quantity code	Prod. code	Prod. code	Prod. code	Input code	Country code	Price of SK, BT, CH	Price of MK	Labor input	Capital input
1	QDP	SK	BT	CH	MK	AUS	1.292	-1.292	0.130	0.134
2	QDP	SK	BT	CH	MK	NZL	1.292	-1.292	0.130	0.134
3	QDP	SK	BT	CH	MK	XOC	1.292	-1.292	0.130	0.134
4	QDP	SK	BT	CH	MK	CHN	1.564	-1.564	0.057	0.112
5	QDP	SK	BT	CH	MK	HKG	1.002	-1.002	0.150	0.229
6	QDP	SK	BT	CH	MK	JPN	1.267	-1.267	0.111	0.179
7	QDP	SK	BT	CH	MK	KOR	1.322	-1.322	0.068	0.124
8	QDP	SK	BT	CH	MK	MNG	1.564	-1.564	0.057	0.112
9	QDP	SK	BT	CH	MK	TWN	1.540	-1.540	0.157	0.098
10	QDP	SK	BT	CH	MK	XEA	1.417	-1.417	0.110	0.190
11	QDP	SK	BT	CH	MK	BRN	1.000	-1.000	0.000	0.000
12	QDP	SK	BT	CH	MK	KHM	1.000	-1.000	0.060	0.076
13	QDP	SK	BT	CH	MK	IDN	1.032	-1.032	0.157	0.125
14	QDP	SK	BT	CH	MK	LAO	1.000	-1.000	0.129	0.194
15	QDP	SK	BT	CH	MK	MYS	1.025	-1.025	0.020	0.124
16	QDP	SK	BT	CH	MK	PHL	1.003	-1.003	0.066	0.235
17	QDP	SK	BT	CH	MK	SGP	1.001	-1.001	0.060	0.117
18	QDP	SK	BT	CH	MK	THA	1.098	-1.098	0.072	0.254
19	QDP	SK	BT	CH	MK	VNM	1.001	-1.001	0.110	0.113
20	QDP	SK	BT	CH	MK	XSE	1.000	-1.000	0.121	0.187
21	QDP	SK	BT	CH	MK	BGD	1.001	-1.001	0.098	0.056
22	QDP	SK	BT	CH	MK	IND	1.265	-1.265	0.143	0.052
23	QDP	SK	BT	CH	MK	NPL	1.265	-1.265	0.143	0.052
24	QDP	SK	BT	CH	MK	PAK	1.000	-1.000	0.028	0.531
25	QDP	SK	BT	CH	MK	LKA	1.349	-1.349	0.062	0.473
26	QDP	SK	BT	CH	MK	XSA	1.265	-1.265	0.143	0.052
27	QDP	SK	BT	CH	MK	CAN	1.431	-1.431	0.105	0.164
28	QDP	SK	BT	CH	MK	USA	1.462	-1.462	0.179	0.143
29	QDP	SK	BT	CH	MK	MEX	1.249	-1.249	0.083	0.364
30	QDP	SK	BT	CH	MK	XNA	1.383	-1.383	0.111	0.143
31	QDP	SK	BT	CH	MK	ARG	1.615	-1.615	0.093	0.059
32	QDP	SK	BT	CH	MK	BOL	1.230	-1.230	0.150	0.290
33	QDP	SK	BT	CH	MK	BRA	1.547	-1.547	0.173	0.141
34	QDP	SK	BT	CH	MK	CHL	1.254	-1.254	0.093	0.287
35	QDP	SK	BT	CH	MK	COL	1.574	-1.574	0.142	0.237
36	QDP	SK	BT	CH	MK	ECU	1.440	-1.440	0.124	0.279
37	QDP	SK	BT	CH	MK	PRY	1.213	-1.213	0.064	0.083
38	QDP	SK	BT	CH	MK	PER	1.479	-1.479	0.135	0.206
39	QDP	SK	BT	CH	MK	URY	1.599	-1.599	0.269	0.221
40	QDP	SK	BT	CH	MK	VEN	1.445	-1.445	0.210	0.253
41	QDP	SK	BT	CH	MK	XSM	1.437	-1.437	0.128	0.133
42	QDP	SK	BT	CH	MK	CRI	1.626	-1.626	0.136	0.122
43	QDP	SK	BT	CH	MK	GTM	1.224	-1.224	0.180	0.241
44	QDP	SK	BT	CH	MK	HND	1.544	-1.544	0.164	0.130
45	QDP	SK	BT	CH	MK	NIC	1.544	-1.544	0.164	0.130
46	QDP	SK	BT	CH	MK	PAN	1.024	-1.024	0.067	0.171
47	QDP	SK	BT	CH	MK	SLV	1.560	-1.560	0.259	0.194
48	QDP	SK	BT	CH	MK	BLZ	1.369	-1.369	0.126	0.233
49	QDP	SK	BT	CH	MK	DOM	1.433	-1.433	0.102	0.488
50	QDP	SK	BT	CH	MK	JAM	1.041	-1.041	0.068	0.114
51	QDP	SK	BT	CH	MK	PRI	1.049	-1.049	0.090	0.076
52	QDP	SK	BT	CH	MK	TTO	1.179	-1.179	0.065	0.054
53	QDP	SK	BT	CH	MK	XCB	1.469	-1.469	0.116	0.205
54	QDP	SK	BT	CH	MK	AUT	1.238	-1.238	0.058	0.088
55	QDP	SK	BT	CH	MK	BEL	1.120	-1.120	0.073	0.112
56	QDP	SK	BT	CH	MK	CYP	1.238	-1.238	0.043	0.059
57	QDP	SK	BT	CH	MK	CZE	1.176	-1.176	0.078	0.143
58	QDP	SK	BT	CH	MK	DNK	1.248	-1.248	0.111	0.087
59	QDP	SK	BT	CH	MK	EST	1.106	-1.106	0.102	0.092
60	QDP	SK	BT	CH	MK	FIN	1.266	-1.266	0.064	0.061
61	QDP	SK	BT	CH	MK	FRA	1.220	-1.220	0.042	0.065
62	QDP	SK	BT	CH	MK	DEU	1.301	-1.301	0.073	0.090
63	QDP	SK	BT	CH	MK	GRC	1.215	-1.215	0.066	0.099
64	QDP	SK	BT	CH	MK	HUN	1.122	-1.122	0.084	0.092
65	QDP	SK	BT	CH	MK	IRL	1.323	-1.323	0.041	0.059
66	QDP	SK	BT	CH	MK	ITA	1.160	-1.160	0.086	0.085
67	QDP	SK	BT	CH	MK	LVA	1.076	-1.076	0.060	0.487
68	QDP	SK	BT	CH	MK	LTU	1.138	-1.138	0.086	0.105
69	QDP	SK	BT	CH	MK	LUX	1.108	-1.108	0.012	0.235
70	QDP	SK	BT	CH	MK	MLT	1.352	-1.352	0.099	0.115
71	QDP	SK	BT	CH	MK	NLD	1.282	-1.282	0.055	0.094
72	QDP	SK	BT	CH	MK	POL	1.087	-1.087	0.141	0.173

Table A-3-15. Elasticity of input demand for dairy products (continued).

CNO	QID	PID	PID	PID	IID	CID	P_SK, BT, CH	P_MK	L	K
Country No.	Quantity code	Prod. code	Prod. code	Prod. code	Input code	Country code	Price of SK, BT, CH	Price of MK	Labor input	Capital input
73	QDP	SK	BT	CH	MK	PRT	1.182	-1.182	0.070	0.091
74	QDP	SK	BT	CH	MK	SVK	1.078	-1.078	0.093	0.078
75	QDP	SK	BT	CH	MK	SVN	1.133	-1.133	0.046	0.169
76	QDP	SK	BT	CH	MK	ESP	1.166	-1.166	0.090	0.101
77	QDP	SK	BT	CH	MK	SWE	1.184	-1.184	0.069	0.088
78	QDP	SK	BT	CH	MK	GBR	1.227	-1.227	0.121	0.107
79	QDP	SK	BT	CH	MK	CHE	1.185	-1.185	0.089	0.105
80	QDP	SK	BT	CH	MK	NOR	1.242	-1.242	0.113	0.118
81	QDP	SK	BT	CH	MK	XEF	1.221	-1.221	0.061	0.112
82	QDP	SK	BT	CH	MK	ALB	1.644	-1.644	0.058	0.512
83	QDP	SK	BT	CH	MK	BGR	1.140	-1.140	0.035	0.038
84	QDP	SK	BT	CH	MK	BLR	1.119	-1.119	0.086	0.112
85	QDP	SK	BT	CH	MK	HRV	1.248	-1.248	0.110	0.051
86	QDP	SK	BT	CH	MK	ROU	1.033	-1.033	0.035	0.057
87	QDP	SK	BT	CH	MK	RUS	1.011	-1.011	0.106	0.171
88	QDP	SK	BT	CH	MK	UKR	1.076	-1.076	0.100	0.065
89	QDP	SK	BT	CH	MK	XEE	1.068	-1.068	0.091	0.057
90	QDP	SK	BT	CH	MK	XER	1.227	-1.227	0.066	0.160
91	QDP	SK	BT	CH	MK	KAZ	1.062	-1.062	0.092	0.132
92	QDP	SK	BT	CH	MK	KGZ	1.660	-1.660	0.047	0.053
93	QDP	SK	BT	CH	MK	XSU	1.386	-1.386	0.060	0.089
94	QDP	SK	BT	CH	MK	ARM	1.126	-1.126	0.223	0.133
95	QDP	SK	BT	CH	MK	AZE	1.934	-1.934	0.052	0.136
96	QDP	SK	BT	CH	MK	GEO	1.386	-1.386	0.126	0.069
97	QDP	SK	BT	CH	MK	BHR	1.053	-1.053	0.139	0.176
98	QDP	SK	BT	CH	MK	IRN	1.191	-1.191	0.227	0.324
99	QDP	SK	BT	CH	MK	ISR	1.222	-1.222	0.300	0.041
100	QDP	SK	BT	CH	MK	KWT	1.004	-1.004	0.066	0.235
101	QDP	SK	BT	CH	MK	JOR	1.831	-1.831	0.155	0.229
102	QDP	SK	BT	CH	MK	OMN	1.085	-1.085	0.079	0.126
103	QDP	SK	BT	CH	MK	QAT	1.095	-1.095	0.234	0.281
104	QDP	SK	BT	CH	MK	SAU	1.053	-1.053	0.139	0.176
105	QDP	SK	BT	CH	MK	TUR	1.191	-1.191	0.227	0.324
106	QDP	SK	BT	CH	MK	ARE	1.687	-1.687	0.109	0.162
107	QDP	SK	BT	CH	MK	XWS	1.674	-1.674	0.084	0.121
108	QDP	SK	BT	CH	MK	EGY	1.006	-1.006	0.339	0.188
109	QDP	SK	BT	CH	MK	MAR	1.334	-1.334	0.376	0.260
110	QDP	SK	BT	CH	MK	TUN	1.459	-1.459	0.015	0.054
111	QDP	SK	BT	CH	MK	XNF	1.301	-1.301	0.014	0.038
112	QDP	SK	BT	CH	MK	BEN	1.120	-1.120	0.139	0.265
113	QDP	SK	BT	CH	MK	BFA	1.042	-1.042	0.009	0.478
114	QDP	SK	BT	CH	MK	CMR	1.002	-1.002	0.073	0.165
115	QDP	SK	BT	CH	MK	CIV	1.230	-1.230	0.068	0.135
116	QDP	SK	BT	CH	MK	GHA	1.008	-1.008	0.255	0.189
117	QDP	SK	BT	CH	MK	GIN	1.001	-1.001	0.004	0.450
118	QDP	SK	BT	CH	MK	NGA	1.000	-1.000	0.417	0.280
119	QDP	SK	BT	CH	MK	SEN	1.815	-1.815	0.028	0.153
120	QDP	SK	BT	CH	MK	TGO	1.046	-1.046	0.077	0.092
121	QDP	SK	BT	CH	MK	XWF	1.378	-1.378	0.051	0.345
122	QDP	SK	BT	CH	MK	XCF	1.176	-1.176	0.044	0.154
123	QDP	SK	BT	CH	MK	XAC	1.049	-1.049	0.043	0.159
124	QDP	SK	BT	CH	MK	ETH	1.114	-1.114	0.027	0.071
125	QDP	SK	BT	CH	MK	KEN	1.086	-1.086	0.116	0.321
126	QDP	SK	BT	CH	MK	MDG	1.006	-1.006	0.139	0.157
127	QDP	SK	BT	CH	MK	MWI	1.000	-1.000	0.037	0.204
128	QDP	SK	BT	CH	MK	MUS	1.005	-1.005	0.048	0.070
129	QDP	SK	BT	CH	MK	MOZ	1.000	-1.000	0.131	0.240
130	QDP	SK	BT	CH	MK	RWA	1.000	-1.000	0.075	0.075
131	QDP	SK	BT	CH	MK	TZA	1.001	-1.001	0.107	0.629
132	QDP	SK	BT	CH	MK	UGA	1.086	-1.086	0.116	0.321
133	QDP	SK	BT	CH	MK	ZMB	1.100	-1.100	0.084	0.078
134	QDP	SK	BT	CH	MK	ZWE	1.100	-1.100	0.084	0.078
135	QDP	SK	BT	CH	MK	XEC	1.286	-1.286	0.112	0.054
136	QDP	SK	BT	CH	MK	BWA	1.028	-1.028	0.186	0.207
137	QDP	SK	BT	CH	MK	NAM	1.051	-1.051	0.053	0.160
138	QDP	SK	BT	CH	MK	ZAF	1.100	-1.100	0.084	0.078
139	QDP	SK	BT	CH	MK	XSC	1.046	-1.046	0.040	0.157
140	QDP	SK	BT	CH	MK	XTW	1.265	-1.265	0.143	0.052

Appendix 4 Launching pad data
Table A-4-1. Launching pad data of rice in 2010.

CNO	Country No.	PID	CID	YRI	QRI	ARI	IMRI	EXRI	STCRI	QDRI	QDLRI	QDSRI	QDWRI	QDPRI	QDORI	QDXRI	QDFRI	PRU
		Prod. code	Country code	Yield t/ha ⁻¹	Production t	Area t	Imports t	Exports t	Stock change. t	Total Supply t	Feed demand t	Seed demand t	Loss t	Processing demand t	Other demand t	Error t	Food demand t	Farmprice USD/t ⁻¹
1	RI	AUS	328394	9.594	328394	34228	300610	184707	-22849	467147	0	4200	3284	2250	77957	0	379456	369.4
2	RI	NZL	0	0.000	0	0	60512	2182	212	58118	0	0	0	0	37	0	58082	369.4
3	RI	XOC	11662	2.269	5140	178766	178766	1287	5748	183393	2868	328	2417	0	19240	-1	158540	490.2
4	RI	CHN	29852480	6.609	197288299	633377	994797	994797	0	196926879	17489817	6850000	9425150	12	2683333	-46	160478613	328.1
5	RI	HKG	0	0.000	0	532037	532037	16152	0	515885	344	0	769	0	12990	0	501782	328.1
6	RI	JPN	10563333	6.565	1609333	969765	38157	338857	338857	11158085	192934	42000	233293	465894	25957	-3	10198009	2389.8
7	RI	KOR	5976327	6.714	890123	559826	559826	12507	-185185	6708831	0	41167	485000	32605	40974	0	6109085	1610.3
8	RI	MNG	0	0.000	0	23346	23346	0	0	23346	0	0	466	0	7	0	22873	328.1
9	RI	TWN	1565151	6.238	250902	189121	189121	10674	-63333	1806932	88208	13000	12333	19266	3834	0	1670291	328.1
10	RI	XEA	2413667	4.235	570000	194945	194945	35	-564274	3172852	241367	39760	120683	0	2121	0	2768920	1610.3
11	RI	BRN	1148	0.664	1728	61679	61679	5295	-6204	63735	10214	70	3479	0	4176	0	45796	1727.0
12	RI	KHM	8203397	2.923	2806546	54761	54761	125799	-14008	8146368	279154	295481	1230509	0	2911458	0	3429765	242.4
13	RI	IDN	65541727	4.998	13113556	1897594	1897594	16821	1751467	65671032	2607480	557067	5093290	0	9934246	-2	47478952	461.2
14	RI	LAO	830308	3.726	3093733	830308	57158	0	0	3150891	309373	185624	185624	155556	766667	0	1548047	164.5
15	RI	MYS	680109	3.701	2517287	680109	1731303	50643	49126	4148820	75519	19816	192859	0	449218	2	3411406	230.2
16	RI	PHL	16240933	3.630	4474368	4474368	2528003	503	207513	18560921	531333	219667	1047940	5866	46079	-2	16710037	328.9
17	RI	SGP	0	0.000	0	0	0	0	0	0	0	0	0	0	0	0	0	230.2
18	RI	THA	34217809	2.956	11574424	53488	53488	14217416	782828	19271053	3421799	911883	2539731	986604	0	0	11411037	287.8
19	RI	VNM	40451380	5.374	7527347	2191	2191	10322246	-387597	30518921	3726927	1213541	3737109	517572	1943101	-7	9380679	300.3
20	RI	XSE	31534500	3.984	7915913	25142	25142	1215762	1021258	29322623	12461950	829640	947596	4169312	1179865	3	9734257	535.2
21	RI	BGD	4325	4.325	11470177	1015924	1015924	4873	6323541	44298243	1489390	1149333	2482316	1	4900	-14	39172316	170.1
22	RI	IND	145845333	3.397	42930233	32119	32119	4742757	249875	140884821	2916907	3231060	4901693	534813	0	-7	129300355	322.3
23	RI	NPL	4335931	2.869	1511235	1511235	190527	1608	-133280	4658130	573387	90567	490189	1	398	0	3503588	269.4
24	RI	PAK	8921191	3.423	2606633	16659	16659	5145122	-729289	4522016	0	231856	267776	1	427225	-1	3595160	172.8
25	RI	LKA	3949060	3.829	1031273	128049	128049	10937	292340	3773832	170	105733	236533	353	15721	0	3415322	274.1
26	RI	XSA	663000	0.000	229615	107512	107512	0	5797	764715	0	21805	46773	0	5067	0	691070	961.5
27	RI	CAN	0	0.000	0	541579	541579	8653	9539	523388	0	14636	14636	0	43412	-1	465341	305.7
28	RI	USA	9796011	7.779	1259254	1301624	1301624	5475165	196581	5425889	0	159075	1157125	678441	213323	0	3217726	305.7
29	RI	MEX	217722	5.024	43338	945943	945943	82879	-71	1080856	0	2395	49405	46031	4422	0	978604	269.8
30	RI	XNA	0	0.000	0	663	663	0	-25	688	0	0	0	0	143	0	545	305.7
31	RI	ARG	1441830	6.486	222305	23453	23453	912042	-49572	602813	0	38153	83751	1	45	-1	480864	242.4
32	RI	BOL	427006	2.290	186438	11088	11088	2509	167	435418	4706	14759	16906	0	5189	-1	393858	302.4
33	RI	BRA	12454707	4.476	2782462	930655	930655	1150449	-335784	12590697	0	204609	1491908	918143	471	-2	9975568	342.8
34	RI	CHL	24443	4.805	117453	179743	179743	1505	0	295690	3927	3731	3731	0	132	0	218314	246.0
35	RI	COL	2159352	4.267	506048	75392	75392	164	-63725	2298306	88235	108238	21805	173528	0	1	1909500	440.3
36	RI	ECU	1587847	4.261	372636	330	330	35802	0	1552374	0	28333	69000	0	457162	-35	997914	283.3
37	RI	PRY	312820	4.990	62694	1350	1350	228343	21751	64075	0	3998	15846	0	0	-108	44339	246.2
38	RI	PER	2815663	7.327	384295	172484	172484	23544	-8	2964611	0	28667	108183	99512	682062	-2	2046189	298.0
39	RI	URY	1359646	7.865	172867	2240	2240	1311722	-60831	110995	0	25802	27236	0	32	0	57925	243.6
40	RI	VEN	1017759	5.019	202789	415856	415856	2486	-74196	1505325	112777	20822	37939	16257	0	1	1317530	427.0
41	RI	XSM	189726	4.251	189726	657	657	280197	99375	427536	124013	27356	59715	9821	62119	1	144512	242.6
42	RI	CRI	268801	3.824	70287	104567	104567	8144	8000	357224	0	4761	10592	0	461	0	341409	604.0
43	RI	GTM	28610	3.138	9118	99033	99033	13497	0	114146	0	927	953	593	0	-688	112361	269.8
44	RI	HND	45431	5.457	8325	155349	155349	4648	0	196132	0	398	10037	8671	0	1	177025	340.3
45	RI	NIC	400609	4.579	87482	136115	136115	8377	105787	422560	0	2700	7100	8671	33916	0	378844	379.1
46	RI	PAN	251944	2.326	108295	70962	70962	0	-31246	354152	0	4938	6780	0	353	0	342081	428.8

Table A-4-1. Launching pad data of rice in 2010 (continued).

CNO	PID	CID	YRI	QRI	ARI	IMRI	EXRI	STCRI	QDRI	QDLRI	QDSRI	QDWRI	QDPRI	QDORI	QDXRI	QDFRI	PRI	
Country No.	Prod. code	Country code	Yield t/ha ⁻¹	Production t	Area t	Imports t	Exports t	Stock change. t	Total Supply t	Feed demand t	Seed demand t	Loss t	Processing demand t	Other demand t	Error t	Food demand t	Farm price USD t ⁻¹	
47	RI	SLV	6506	33419	5137	95815	8129	0	121105	0	427	2049	24001	42	0	94585	372.1	
48	RI	XCA	4385	20073	4577	302	222	2338	17815	0	309	1596	0	1180	1	14729	240.8	
49	RI	DOM	4613	835019	181005	39806	25086	25641	824098	0	17397	25053	44615	0	0	737033	490.3	
50	RI	IAM	4385	216	49	107386	8	-19375	126970	10765	6	1026	6875	83	0	108214	1111.0	
51	RI	PRI	0000	0	0	0	0	0	0	0	0	0	0	0	0	0	490.3	
52	RI	TTO	1140	2383	2090	48464	5382	4493	40972	4120	180	537	0	114	1	36019	444.2	
53	RI	XCB	2565	665946	259605	1382304	3885	75428	1968937	170883	18801	62743	3583	12086	-58	1700949	490.3	
54	RI	AUT	0000	0	0	600155	6996	-1260	53296	98818	0	1799	6627	562	0	148772	389.7	
55	RI	BEL	0000	0	0	0	228	0	9131	73	0	0	0	455	0	8603	720.0	
56	RI	CYP	0000	0	0	9359	228	0	73700	4656	0	0	0	1177	0	67867	310.0	
57	RI	CZE	0000	0	0	96284	22584	0	51007	3761	0	0	0	4479	-51	42818	389.7	
58	RI	DNK	0000	0	0	64649	13642	0	4603	0	0	0	0	49	0	4554	330.5	
59	RI	EST	0000	0	0	5291	688	0	36749	0	0	0	0	1154	0	35595	354.7	
60	RI	FIN	0000	0	0	37916	1167	0	68441	126703	3333	1000	2381	1877	-1	523147	389.7	
61	RI	FRA	5641	126645	22451	701219	138004	31420	68441	21390	0	8182	0	583	0	385372	389.7	
62	RI	DEU	0000	0	0	565374	143127	6720	415526	0	4785	6922	0	1036	1	109472	298.4	
63	RI	GRC	7182	228400	31800	85106	176097	785	136624	14408	4785	6922	0	124	-1	43334	310.0	
64	RI	HUN	3553	8897	2504	54890	8156	2545	53086	9093	474	61	0	431	0	22199	389.7	
65	RI	IRL	0000	0	0	29348	593	0	28755	6126	0	0	0	0	0	0	0	0
66	RI	ITA	6315	1542317	244233	182336	1120893	10093	593666	39614	48647	1083	10507	18060	0	475755	595.3	
67	RI	LVA	0000	0	0	9607	1075	-2	8535	141	0	0	0	0	0	8394	330.5	
68	RI	LTU	0000	0	0	19966	5053	-75	14988	195	0	0	0	0	0	14793	330.5	
69	RI	LUX	0000	0	0	3240	107	0	3133	378	0	0	0	25	0	2730	389.7	
70	RI	MLT	0000	0	0	3317	25	0	3292	0	0	26	0	281	0	2985	595.3	
71	RI	NLD	0000	0	0	364535	217992	0	146543	69623	0	0	0	6146	0	70775	389.7	
72	RI	POL	0000	0	0	192744	125848	-14678	81574	12797	0	0	1157	2231	0	65389	330.5	
73	RI	PRT	5807	172339	29679	140048	54810	-15826	273403	0	4000	383	0	7167	-1	261853	360.8	
74	RI	SVK	0000	0	0	44454	11634	83	32737	12106	0	0	0	36	0	20594	310.0	
75	RI	SVN	0000	0	0	15385	3499	500	11386	583	0	293	143	0	0	10367	595.3	
76	RI	ESP	7611	923042	121284	232208	423432	104913	626906	1900	17033	0	0	49999	0	557973	381.1	
77	RI	SWE	0000	0	0	87919	1490	0	86428	474	0	0	0	1161	0	84793	354.7	
78	RI	GBR	0000	0	0	1007129	291538	0	715591	18113	0	0	0	76090	0	621387	389.7	
79	RI	CHE	0000	0	0	169112	1396	-500	168216	118494	0	0	0	743	0	48978	310.0	
80	RI	NOR	0000	0	0	35942	270	0	35672	804	0	0	0	289	0	34580	389.7	
81	RI	XEF	0000	0	0	1876	0	0	1876	215	0	0	0	0	0	1661	389.7	
82	RI	ALB	0000	0	0	34113	61	0	34052	0	0	46	0	17	0	33989	637.8	
83	RI	BGR	5300	53020	10004	38375	51002	3750	36643	6262	2247	1647	0	844	0	25643	374.8	
84	RI	BLR	0000	0	0	42987	499	0	42488	104	0	0	0	0	0	42385	330.5	
85	RI	HRV	0000	0	0	16606	236	0	16370	0	0	0	0	19	-1	16352	310.0	
86	RI	ROU	5187	66422	12807	93059	47076	19487	92919	0	3843	3209	0	6411	1	79455	295.1	
87	RI	RUS	5173	1009733	195200	346033	187214	-2093	1170646	0	57333	41022	0	603	0	1071687	354.7	
88	RI	UKR	5525	153600	27800	94691	4085	0	244206	0	5700	9751	0	0	0	228755	330.5	
89	RI	XEE	0000	0	0	16491	0	0	16491	0	0	0	0	2	0	16489	330.5	
90	RI	XER	6176	24178	3915	33216	8913	256	48224	3303	1033	3135	0	775	0	39978	499.4	
91	RI	KAZ	3748	342303	91333	34173	57362	0	319114	1618	12233	38893	0	74000	0	192370	287.1	
92	RI	KGZ	3229	20334	6297	36314	2611	0	54037	0	200	416	0	1	0	53421	1353.9	
93	RI	XSU	3166	349568	110420	24990	3329	0	371229	854	24915	11611	0	1167	0	332682	505.9	

Table A-4-2. Launching pad data of wheat in 2010.

CNO	Country No.	PID	CID	Country code	YWH	Yield	QWH	Production	AWH	Area	IMWH	Imports	EXWH	Exports	STCWH	Stock change.	QDWH	Total Supply	QDLWH	Feed demand	QDSWH	Seed demand	QDWWH	Loss	QDPWH	Processing demand	QDOWH	Other demand	QDXWH	Error	QDFWH	Food demand	PWH	Farm price
1	WH	1745	AUS	13598927	200724	16406972	1420363	6108083	2719667	677333	237351	96593	706741	4	1670394	228.1																		
2	WH	7638	NZL	53750	363363	41931	-24307	756278	305000	10000	34842	73333	1934	1	331168	293.1																		
3	WH	1300	XOC	7	220148	49577	-31375	201954	2998	1	4150	0	40377	0	154428	228.1																		
4	WH	4775	CHN	24272460	1190283	626169	3302683	113163431	17210826	4690000	2897950	91169	2782970	2	85490515	290.6																		
5	WH	0000	HKG	0	453252	68860	0	384392	0	0	990	784	7371	0	375248	290.6																		
6	WH	3178	JPN	208900	5764636	266423	-553176	6715323	622667	20000	165333	152628	633	0	5754061	801.8																		
7	WH	3313	KOR	10220	4518339	84949	-386945	4854193	2335667	1402	30000	0	915	0	2486209	801.8																		
8	WH	1479	MNG	263497	1478706	0	568529	141000	568529	23667	13413	22000	26283	0	342166	354.5																		
9	WH	2490	TWN	1282	1320332	44314	132932	1146278	62437	116	16422	0	4327	0	1062976	290.6																		
10	WH	2164	XEA	70233	314700	413	-184000	650287	13508	12400	28231	0	2433	0	593714	801.8																		
11	WH	0000	BRN	0	15698	15	-183	15867	0	0	0	0	0	1	15866	953.2																		
12	WH	0000	KHM	0	33635	300	0	33336	0	0	267	0	0	-296	33365	290.6																		
13	WH	0000	IDN	0	6029587	176908	100000	5752679	150707	0	114696	0	0	-15623	5385137	953.2																		
14	WH	0000	LAO	0	11535	0	0	11535	0	0	0	0	0	0	11535	290.6																		
15	WH	0000	MYS	0	1411342	268041	-440000	1583301	43333	0	0	0	0	-1	1490123	290.6																		
16	WH	0000	PHL	0	2780475	50379	-162087	2892183	916667	0	0	0	4454	0	1971062	290.6																		
17	WH	0000	SGP	0	0	0	0	0	0	0	0	0	0	0	0	290.6																		
18	WH	0948	THA	1157	1712769	202713	183333	1327880	592163	170	0	6018	0	0	729530	290.6																		
19	WH	0000	VNM	0	2072669	57147	171930	1843593	900000	0	0	0	0	0	913247	290.6																		
20	WH	1794	XSE	100099	204565	1222	0	382887	35471	6006	17910	0	0	0	323501	290.6																		
21	WH	2379	BGD	381525	2915499	8546	576270	3238223	0	36938	204780	0	453440	-1613	2544678	269.6																		
22	WH	2912	IND	82785667	131990	362840	1360000	81194817	1781320	2912867	5005134	1	0	-5	71495501	228.7																		
23	WH	2118	NPL	731193	16538	25282	-56667	1596660	86791	73333	163750	0	11	0	1272775	260.6																		
24	WH	2680	PAK	9026100	1123377	1255006	6323290	23421880	483959	1334698	631468	1366	1264793	1	19705595	281.6																		
25	WH	0000	LKA	0	1141669	320290	23449	797930	0	0	22407	0	7027	-1	768496	228.7																		
26	WH	1811	XSA	2389573	1660188	0	367593	5620595	0	320000	651579	0	6731	0	4642286	347.5																		
27	WH	2852	CAN	8828933	951574	1899085	125498	7014257	2563700	898733	22767	0	764168	-70925	2835814	201.8																		
28	WH	3017	USA	19319435	4197658	28920067	2062393	31497513	4472143	1965878	0	0	612	-1	25058881	218.0																		
29	WH	5265	MEX	723060	3654189	1431376	0	6029607	84000	70156	268643	0	1601384	0	4005424	238.9																		
30	WH	0000	XNA	0	6540	0	417	6123	0	0	0	0	2134	0	3989	218.0																		
31	WH	3257	ARG	4080937	8481	6990145	1389284	4920656	0	414109	502825	0	17295	2	3986424	177.3																		
32	WH	1208	BOL	172689	402214	3842	35299	571683	0	13307	24619	0	325	0	533431	277.2																		
33	WH	2506	BRA	2250245	6813578	1431402	-566667	11587782	366667	178509	581034	0	1542	2	10460028	230.7																		
34	WH	5200	CHL	272121	756475	179113	-68812	2061184	148333	41651	56607	0	2891	-1	1811703	282.6																		
35	WH	1690	COL	10306	1496937	44120	0	1470234	0	749	21792	1888	0	0	1445805	436.8																		
36	WH	0885	ECU	9361	610064	3120	33333	581897	650	1667	617	0	1904	0	577060	340.0																		
37	WH	2379	PER	551069	34359	885299	-11	459961	163333	33000	63555	0	1	-2	200074	203.4																		
38	WH	1441	PER	152610	1673118	122352	0	1770720	0	24333	129346	86	13825	0	1603130	411.9																		
39	WH	3337	URY	515538	54721	1231381	-45648	589460	70667	58329	97596	0	4	0	362863	239.5																		
40	WH	2919	VEN	107	1547351	161	-43705	1591209	231	7	44656	0	312	-1	1546003	436.8																		
41	WH	0000	XSM	0	0	4786	-4755	90702	5333	0	3914	0	2667	-1	787888	230.7																		
42	WH	0000	CRI	0	294201	79693	19967	194541	0	0	8422	0	71	0	186048	436.8																		
43	WH	2222	GTM	687	609511	121314	-10317	500041	0	933	2676	412	9	0	496012	238.9																		
44	WH	0505	HND	2075	301521	26236	-8167	284499	6167	240	559	0	1	0	277533	238.9																		
45	WH	0000	NIC	0	190687	32740	2667	155280	0	0	2314	0	0	0	152966	238.9																		
46	WH	0000	PAN	0	171039	2082	5450	163507	0	0	1380	0	27598	1	134528	436.8																		

Table A-4-3. Launching pad data of maize in 2010.

CNO	Country No.	PID	CID	YMZ	QYMZ	AMZ	IMMZ	EXMZ	STCMZ	QDMZ	QDLMZ	QDSMZ	QDWMZ	QDPMZ	QDOMZ	QDXMZ	QDFMZ	PMZ	
		Prod. code	Country code	Yield t/ha ¹	Production t	Area t	Imports t	Exports t	Stock change.	Total Supply t	Feed demand t	Seed demand t	Loss t	Processing demand t	Other demand t	Error t	Food demand t	Farm price USD ¹	
1	MZ	AUS	353538	5709	61925	25954	31065	-61603	410029	273000	1000	13096	0	9713	0	0	113221	2440	
2	MZ	NZL	212277	11055	19202	6076	14461	-10167	214059	151833	263	6745	0	39634	0	0	15584	294.6	
3	MZ	XOC	4423	8479	4899	14	14	0	12889	10580	113	34	0	1271	0	0	574	879.8	
4	MZ	CHN	178059995	5494	32408220	11470566	656307	7595984	170954759	115033333	1471667	8438688	0	5629214	0	-5	9871764	279.4	
5	MZ	HKG	0	0	0	0	0	0	46282	11032	0	3014	0	0	0	0	31663	279.4	
6	MZ	JPN	164	2528	65	15927651	1589	228171	15698056	11862667	3	3000	0	2252840	0	-3	1261069	518.4	
7	MZ	KOR	74975	4819	15559	7934837	107955	-25641	7927499	5529026	806	159059	0	1511624	0	0	618573	518.4	
8	MZ	MNG	0	0	0	435	0	0	435	0	0	0	0	0	0	0	343	279.4	
9	MZ	TWN	124193	6561	18930	4651819	935	10486	4764591	4466667	1200	41630	0	81141	0	0	141954	279.4	
10	MZ	XEA	1748333	3476	503000	130988	2	-183337	2062656	148832	23055	156067	0	371606	0	0	1112031	518.4	
11	MZ	BRN	0	0	0	3637	0	-1417	5053	0	0	0	0	0	0	0	5050	239.2	
12	MZ	KHM	804765	3961	203181	9267	118145	85000	610887	253841	10062	120934	0	60000	0	0	166051	256.1	
13	MZ	IDN	17866877	4409	4052342	1884156	77114	978431	18695487	5000000	168333	1162641	0	9045	0	1	8027041	313.3	
14	MZ	LAO	1083832	5141	210817	403	220280	0	863955	416667	4144	21685	0	326667	0	0	94792	145.5	
15	MZ	MYS	47947	5633	8512	3074794	10752	9523	3102465	2653460	217	145190	0	11199	0	0	268294	158.9	
16	MZ	PHL	6794017	2638	2575851	213997	644	-176667	7184037	4416000	50327	52667	0	797087	0	1	1867955	261.0	
17	MZ	SGP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	158.9	
18	MZ	THA	4816606	4230	1138781	318603	654180	0	4481028	3539535	23906	102490	0	142748	0	0	672349	221.7	
19	MZ	VNM	4604739	4140	1112282	1337079	396	0	5941423	4666667	28049	237673	0	0	0	-1	1009035	268.7	
20	MZ	XSE	1479936	3347	442217	3190	61451	263333	1156341	834636	12861	72367	0	268	0	0	236211	221.7	
21	MZ	BGD	878436	5910	148646	624912	0	0	1503347	1300000	10293	74382	0	11649	0	0	107023	197.7	
22	MZ	IND	20068433	2352	8531600	16945	3059411	500000	16525967	5901988	954917	2024792	-1	37984	2	2	7606285	181.2	
23	MZ	NPL	1951125	2203	885780	125442	443	40000	2036124	569638	21667	215000	0	0	0	0	1229819	264.6	
24	MZ	PAK	3773	3768803	998893	25944	244881	0	3549866	765133	95667	189654	0	12805	0	0	2207282	217.3	
25	MZ	LKA	143086	2699	53008	23108	86	0	166108	83090	1037	4768	0	6663	0	0	70549	322.3	
26	MZ	XSA	300484	1533	195991	3598	54	0	304028	188000	10141	30390	0	0	0	0	75497	290.5	
27	MZ	CAN	10654800	9013	1182200	1698669	853366	0	11500103	9019461	13433	365726	0	1181046	0	0	663889	188.2	
28	MZ	USA	320882763	9712	33039454	629396	48834107	-8798402	281476454	12261232	591524	3615856	0	22813621	0	-22	3945295	196.3	
29	MZ	MEX	20360040	3142	6480061	8288062	479151	-1270000	29438952	10207912	383054	3615856	0	1501609	0	3	13682336	252.8	
30	MZ	XNA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	196.3
31	MZ	ARG	19861437	6617	3001683	6566	14313244	500000	5054759	2745776	156667	347554	0	463668	0	1	404356	141.6	
32	MZ	BOL	1037175	2699	384250	48159	14505	-16792	1087622	300000	16667	58809	0	314539	0	-1	397607	248.2	
33	MZ	BRA	53914777	4089	13184161	786789	9494181	0	45207386	34553992	346948	5466689	0	80995	0	1	4758761	194.8	
34	MZ	CHL	1380377	11175	123526	706158	61706	-23333	2048162	1483333	2544	20742	0	169619	0	1	371923	236.7	
35	MZ	COL	1567337	2758	568332	3371164	34713	-76667	4980454	3520344	9559	75575	0	14889	0	1	1360086	367.0	
36	MZ	ECU	919581	1989	462300	470938	12114	376667	1378405	680000	13000	70598	0	501212	0	0	113596	310.0	
37	MZ	PRY	2770846	3432	807242	16229	1648818	0	761590	101990	17618	173288	0	89806	0	-1	375645	199.2	
38	MZ	PER	1538905	3103	495931	1786868	14247	-13333	3311526	2617410	38833	77000	0	3946	0	0	574337	462.1	
39	MZ	URY	361700	4104	88133	62471	88722	-13333	348783	201667	3509	21388	0	19048	0	-1	95022	218.5	
40	MZ	VEN	1697186	2923	580659	1523100	8	-107194	3327472	1499765	2266	79887	0	52035	0	0	1691580	679.0	
41	MZ	XSM	3684	1359	5005	49291	4	4568	49724	45656	66	1321	0	272	0	0	2409	1777.7	
42	MZ	CRI	20375	2088	9756	628236	8964	0	639647	548333	143	31399	0	0	0	0	47895	411.7	
43	MZ	GTM	1664378	1985	838544	719517	12339	0	2371556	797333	25108	58667	0	265652	0	0	1224796	252.8	
44	MZ	HND	560141	1687	332035	433801	1617	0	992324	315667	9600	66015	0	6616	0	0	594426	283.6	
45	MZ	NIC	494359	1435	344403	135950	9224	8333	612752	30833	24467	123533	0	0	0	0	391769	317.1	
46	MZ	PAN	84185	1635	51502	370887	6	-15822	470888	370814	1420	1612	0	9948	0	0	87094	462.2	

Table A-4-3. Launching pad data of maize in 2010 (continued).

CNO	Country No.	PID	Prod. code	YMZ	Yield t/ha ⁻¹	QYZ	Production t	AMZ	Area t	IMMZ	Imports t	EXMZ	Exports t	STCMZ	Stock change.	QDMZ	Total Supply	QDMZ	Feed demand	QDLMZ	Feed demand	QDSMZ	Seed demand	QDWMZ	Loss	QDPMZ	Processing demand	QDOMZ	Other demand	QDXMZ	Error	QDFMZ	Food demand	PMZ	Farm price USDt ⁻¹
47	MZ	SLV		2947	770143	261305	506584	80332	-16667	1213062	677333	3657	64261	0	7042	1	460767	3469																	
48	MZ	XCA		3035	18207	18207	777	7235	0	48806	35400	587	3890	0	36	-1	8895	2100																	
49	MZ	DOM		35709	22666	1042777	1284	15000	15000	1062202	948333	5000	31901	0	13422	0	63546	383.8																	
50	MZ	IAM		1233	2479	2010	203214	530	0	205162	173338	37	10283	0	1410	1	20093	2795.7																	
51	MZ	PRI		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1788.3		
52	MZ	TTO		2472	3208	1298	71934	5706	1852	67584	51456	41	3112	0	1228	0	11747	297.2																	
53	MZ	XCB		1095	664497	60855	808739	607	107692	1364937	799853	15767	84716	0	1560	-2	447383	1234.3																	
54	MZ	AUT		10914	2170824	198900	651976	391696	289037	1327322	1327322	9236	75401	0	117503	-1	112807	191.6																	
55	MZ	BEL		11994	804483	67075	1040413	351981	-28242	1521157	808333	21000	7333	0	661413	0	23077	225.7																	
56	MZ	CYP		0	0	0	182053	18	54047	127988	125569	360	360	0	700	0	1359	323.7																	
57	MZ	CZE		8028	881958	109856	51469	346864	-136667	723229	655000	12933	14013	0	15789	0	0	194.9																	
58	MZ	DNK		5025	33667	6700	99441	10477	752	121878	79618	0	0	0	382	0	26471	220.8																	
59	MZ	EST		0	0	0	18700	558	0	18142	8154	0	0	0	0	0	9606	145.8																	
60	MZ	FIN		0	0	0	5076	11	0	5065	1330	0	0	0	0	0	0	164.3																	
61	MZ	FRA		9290	15058707	1620887	669013	6871176	471281	8385263	5675000	97333	134000	0	465676	1	734920	225.7																	
62	MZ	DEU		9735	4594576	471944	2165283	850571	310589	5598699	3905984	59333	130000	0	30116	0	762460	220.8																	
63	MZ	GRC		10506	2120753	201863	352537	53011	0	2420279	2056170	11570	146620	0	153481	0	19111	260.9																	
64	MZ	HUN		6456	7501751	1162049	88465	3965138	179535	3445543	2687608	36555	183508	0	6238	0	2648	189.5																	
65	MZ	IRL		0	0	0	356926	38199	0	318727	268347	809	809	0	6238	0	43333	225.7																	
66	MZ	ITA		9209	8708744	945702	2452881	367898	137083	10656644	9493333	28340	10497	0	352530	-1	233927	242.3																	
67	MZ	LVA		0	0	0	9312	551	0	8761	8125	0	0	0	0	0	635	145.8																	
68	MZ	LTU		6450	47733	7400	51200	1960	-16667	103640	73305	465	0	0	2142	0	2002	217.7																	
69	MZ	LUX		7291	2634	361	8996	1040	572	10018	4293	465	0	0	0	0	3117	217.3																	
70	MZ	MLT		0	0	0	59566	725	0	58841	44848	0	963	0	10421	0	2609	242.3																	
71	MZ	NLD		12392	215405	17383	3323055	384276	-16667	3170850	2450000	8333	24000	0	420493	1	40625	184.1																	
72	MZ	POL		6418	1938300	302033	440490	248926	-100086	2229949	1997000	9000	73333	0	32969	0	0	189.4																	
73	MZ	PRT		7263	690186	95027	1501276	39962	0	2151500	1895494	3000	13667	0	26372	0	162482	250.5																	
74	MZ	SVK		6539	1117908	170953	173422	329317	-52257	1014269	667526	34733	65000	0	77092	0	0	188.4																	
75	MZ	SVN		8355	320916	38410	269328	161705	16667	411872	266446	2910	59396	0	15826	-1	67295	193.1																	
76	MZ	ESP		10686	3680122	344401	4526410	385095	-208508	8029946	6666667	16667	15000	0	1198336	-1	83395	248.0																	
77	MZ	SWE		0	0	0	40838	1087	0	39751	16212	0	0	0	13448	0	10091	220.8																	
78	MZ	GBR		0	0	0	1085114	29472	-6802	1062445	10000	0	9422	0	88324	0	183908	225.7																	
79	MZ	CHE		9536	156276	16389	115874	530	0	271620	250529	1767	1333	0	1152	0	14806	318.7																	
80	MZ	NOR		0	0	0	22015	19	0	86882	81113	0	0	0	200	0	0	220.8																	
81	MZ	XEF		0	0	0	0	0	0	21996	17190	0	0	0	1562	0	0	318.7																	
82	MZ	ALB		6095	331167	54333	63564	19	0	394712	338844	3167	39128	0	3380	0	8625	319.8																	
83	MZ	BGR		5541	1849144	333710	109815	793703	59348	1055909	333516	20800	173168	0	231912	0	206499	192.5																	
84	MZ	BLR		5652	737458	130482	97871	132	0	835197	769968	23200	37522	0	0	0	4508	261.0																	
85	MZ	HRV		6658	1994667	299603	41800	242774	0	1793693	1609791	4900	40322	0	0	0	85171	180.7																	
86	MZ	ROU		4096	9577627	2338284	563626	2059104	200855	7881294	6785123	59536	118232	0	1458	0	357650	257.0																	
87	MZ	RUS		3736	4670073	1250000	117596	772204	0	4015465	2592986	51900	69000	0	3023	0	98556	164.3																	
88	MZ	UKR		5468	15092400	2760133	35255	6016310	0	9111345	7050325	182567	640000	0	8822	0	533333	145.8																	
89	MZ	XEE		3205	1343064	419019	4435	81800	133333	1152366	751165	9067	57609	0	1080	0	296222	171.4																	
90	MZ	XER		5295	7704830	1455169	267040	1689016	183333	6264521	4736191	44065	398253	0	224984	0	597505	214.7																	
91	MZ	KAZ		4855	471720	97167	23776	8223	-3556	490828	375000	20333	32346	0	46230	0	16919	165.2																	
92	MZ	KGZ		6086	457975	75246	5324	776	0	462523	309937	4667	1380	0	3214	0	143325	243.5																	
93	MZ	XSU		6929	405049	58459	4290	0	0	409339	200011	6865	7065	0	4253	0	191144	391.8																	

Table A-4-4. Launching pad data of other grains in 2010.

CNO Country No.	PID Prod. code	CID Country code	YXG Yield tha ⁻¹	QXG Production t	AXG Area t	IMXG Imports t	EXXG Exports t	STCXG Stock change. t	QDXG Total Supply t	QDLXG Feed demand t	QDSXG Seed demand t	QDWXG Loss t	QDPXG Processing demand t	QDOXG Other demand t	QDXXG Error t	QDXFG Food demand t	PXG Farmprice USD ^{t⁻¹}
1	XC	AUS	1951	11580927	5936971	24176	5788229	-365502	6182376	5545531	238917	51102	323826	0	-339	23339	2202
2	XC	NZL	5630	418840	74399	68463	9913	-479	477869	380281	8448	8833	49620	940	-125	29870	374.7
3	XC	XOC	0065	1203	79	19474	79	-2607	22081	5552	2	15	12831	1168	-5	2519	220.2
4	XC	CHN	2422	7845100	3238467	2121004	774587	0	9191516	3201425	257189	454607	2946191	14462	-122	2317764	749.4
5	XC	HKG	0	0	0	73957	23678	-27	50305	276	0	532	7775	0	-2	41725	749.4
6	XC	JPN	1800	196670	3854132	1937	12593	296001	3752865	2897980	5993	108333	535460	2372	0	202726	3585.1
7	XC	KOR	2303	115722	50239	293272	12593	-3704	400104	38773	2231	9918	302153	160	-2	46872	2272.4
8	XC	MNG	1084	7569	6982	20493	0	-417	28478	142	12565	9333	360	0	0	6077	427.4
9	XC	TWN	2193	3855	1758	273954	2158	859	274792	90197	24	791	85306	15500	0	82974	749.4
10	XC	XEA	1446	248825	172064	3474	5	1000	251294	50221	15912	11236	10598	0	0	163327	3585.1
11	XC	BRN	0	0	0	1987	5	-278	2260	1060	0	0	0	0	0	1199	216.8
12	XC	KHM	0	0	0	41078	264	-3	40817	0	0	0	37277	0	-108	3648	749.4
13	XC	IDN	0	0	0	65588	6518	-9261	68331	11184	0	0	32387	276	-1	24485	216.8
14	XC	LAO	0	0	0	18541	0	3376	15165	4325	0	0	9309	0	0	1531	216.8
15	XC	MYS	0	0	0	172123	28295	-101738	245565	10347	0	0	48933	1449	0	184837	216.8
16	XC	PHL	3919	290	74	314348	8524	-1391	307505	48351	0	0	215352	0	-1	43803	749.4
17	XC	SGP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	749.4
18	XC	THA	1665	362251	217601	291158	238866	-36881	451423	78531	3638	1619	369683	0	-3033	986	216.8
19	XC	VNM	1566	1817	1160	393066	25	0	394858	1800	33	1437	387499	0	-23	4112	1484.9
20	XC	XSE	0908	411699	453430	19340	3	0	441036	263046	12593	20585	16482	0	0	118329	749.4
21	XC	BGD	0381	12384	32536	1145	78	0	13451	114	766	62	0	0	0	12509	267.1
22	XC	IND	1037	20127800	19403067	40866	312731	170633	19685301	457016	613875	1097692	106109	0	-36068	17446677	232.6
23	XC	NPL	1093	333803	305388	29927	1798	7094	354839	7	6742	36200	7161	0	-227	304356	366.5
24	XC	PAK	0661	532974	806765	47531	11830	0	568675	207347	15581	26480	1228	28	-835	318846	370.4
25	XC	LKA	1082	6527	6033	26718	269	-941	33917	165	62	576	13965	0	-166	19314	441.4
26	XC	XSA	1776	426015	239831	19941	0	0	445956	299072	25157	43758	0	0	0	77969	399.9
27	XC	CAN	3113	11757100	3776567	203588	4614562	-12008	7358133	6250367	373333	5652	899064	0	-244065	73782	3940
28	XC	USA	3625	13674316	3771873	3123577	4592127	-443878	12649644	5605253	326983	11228	4816705	0	-4139	1893614	2690
29	XC	MEX	3510	7156271	2038554	3315402	7816	-58628	10522485	9147393	48307	200364	752994	0	0	373427	413.2
30	XC	XNA	0	0	0	304	0	0	304	0	0	0	10	73	0	222	2690
31	XC	ARG	3645	6492518	1781031	8156	3457438	325500	2717736	189726	266389	189735	352722	0	0	49164	344.3
32	XC	BOL	2127	494074	232309	60144	25278	40	528900	326633	10968	7247	65393	92708	-69	26020	645.6
33	XC	BRA	2353	2545377	1081606	1424649	8905	183	3960937	1923911	41753	66169	1458591	0	0	470514	103.2
34	XC	CHL	4712	641925	136221	1052352	166380	2778	1500118	1045355	17394	17398	57513	292429	-2682	72712	2320
35	XC	COL	3510	97734	27841	544207	9258	-6647	639330	365074	892	14776	190856	0	1	67731	410.5
36	XC	ECU	0892	36736	41181	116033	1350	-5712	157131	31149	3054	2721	32510	0	-184	35953	363.7
37	XC	PER	5342	108527	20315	38502	2674	1111	143244	101256	250	5456	32510	0	-280	4052	116.9
38	XC	PER	1305	271128	207785	249181	7050	0	513258	118844	22896	18610	144418	54616	-4	153880	826.1
39	XC	URY	3261	573017	175703	257185	359442	106148	364611	313508	14778	23318	3404	0	-190	9794	292.6
40	XC	VEN	1853	399042	215315	435551	10	-39317	873700	321152	5438	80732	396566	0	0	69811	273.6
41	XC	XSM	0	0	0	9229	116	0	9341	242	0	5	6304	981	-90	1899	103.2
42	XC	CRI	0	0	0	41526	3490	-952	38988	1479	0	0	14095	0	0	23414	410.5
43	XC	GTM	1742	48901	28071	69874	12650	-9873	115997	37795	56	1707	37933	0	-4316	42322	413.2
44	XC	HND	1142	50175	43943	29699	350	0	79524	28549	406	2517	14823	0	0	33228	232.0
45	XC	NIC	1806	69434	38453	29510	7663	-433	91713	51964	665	6996	13216	0	-13	18885	326.1
46	XC	PAN	3231	4188	1296	54607	1	0	58794	7799	92	0	41252	0	0	9650	271.7

Table A-4-4. Launching pad data of other grains in 2010 (continued).

CNO	PID	CID	YXG	QXG	AXG	IMXG	EXXG	STCXG	QDXG	QDLXG	QDSXG	QDWXG	QDPXG	QDOXG	QDXXG	QDFXG	PXG
Country No.	Prod. code	Country code	Yield t/ha ⁻¹	Production t	Area t	Imports t	Exports t	Stock change. t	Total Supply t	Feed demand t	Seed demand t	Loss t	Processing demand t	Other demand t	Error t	Food demand t	Farmprice USDt ⁻¹
47	XG	SLV	1.628	157235	96587	19089	718	-189	175795	45884	1032	8035	10229	0	0	110615	3279
48	XG	XCA	2.002	10156	5074	2756	23	-24	12913	9133	87	0	2132	230	0	1331	413.2
49	XG	DOM	1.697	1481	873	75598	2757	0	74319	4945	18	75	64024	0	-334	5592	285.9
50	XG	IAM	0.000	0	0	24389	882	0	23507	0	0	0	17293	0	-135	6349	413.2
51	XG	PRI	0.000	0	0	0	0	0	0	0	0	0	0	0	0	0	413.2
52	XG	TTO	0.000	0	0	13606	103	-659	14162	404	0	0	9355	0	-1	4405	410.5
53	XG	XCB	0.991	134693	135972	65985	59	1016	199602	80431	2511	6736	44429	7280	-15	58230	269.0
54	XG	AUT	5.370	1724537	330165	330036	196815	13534	1844224	1402242	49412	72289	185729	10633	-409	124328	201.7
55	XG	BEL	7.994	458456	57351	2749023	1635698	-13667	1585449	1208267	8267	31235	325108	1009	1	11561	263.5
56	XG	CYP	1.818	45925	25263	235620	49	42255	239241	219790	10604	273	7431	0	0	1143	452.7
57	XG	CZE	4.265	2309776	541529	113515	811803	-165500	1776987	1102008	121459	26946	370955	15694	1	139924	241.5
58	XG	DNK	5.403	3967967	734433	295182	840609	-128835	3551374	2881105	131187	117233	131370	140729	-1	149750	239.2
59	XG	EST	2.504	430848	172097	48030	141075	-42600	380403	246101	36752	5802	45563	1980	0	44206	229.8
60	XG	FIN	3.483	2780933	798400	58285	741716	-221876	2319379	1728486	230874	0	158100	47278	-285	154925	224.3
61	XG	FRA	6.083	13840610	2275146	286180	6804866	-168060	7489985	6879767	300419	89467	99133	16587	1	104611	234.9
62	XG	DEU	5.729	16726013	2919462	2719597	3167542	552333	15725736	11410017	396982	401962	2192604	186133	0	1138038	237.8
63	XG	GRC	2.362	487311	206299	282091	2170	1187	766045	578092	26875	20508	107932	0	1	32637	331.8
64	XG	HUN	3.090	1578191	510737	94700	470397	-95295	1297789	1079702	123556	9597	58812	0	-46	26169	389.1
65	XG	IRL	7.043	1444316	205070	274538	126963	-46732	1638624	1370828	31691	33000	175769	0	0	27336	258.4
66	XG	ITA	3.437	1650065	480106	1199239	148782	350572	2349951	1888993	114518	11530	267969	0	0	66941	287.3
67	XG	LVA	2.354	515133	218800	130619	228304	-17056	434505	260982	51700	13383	11311	62	-1	97067	306.3
68	XG	LTU	2.619	1335267	509767	76954	383777	-74802	1103245	801099	98433	35330	78426	4027	1	85929	348.1
69	XG	LUX	5.409	81739	15112	21035	29393	-461	73842	51708	2674	0	8040	7721	0	3700	196.0
70	XG	MLT	4.013	2067	515	28643	0	0	30710	26511	41	782	2275	12	0	1088	287.3
71	XG	NLD	6.274	271391	43254	2736380	681566	-87461	2413666	1789935	4978	28805	394867	0	-1	195081	213.8
72	XG	POL	3.773	1609954	4267445	529559	809480	458088	15361944	10987385	1098580	556895	949095	236667	0	1533122	390.7
73	XG	PRT	1.175	148415	126305	529169	69249	9713	598622	358907	18500	14483	144263	0	1	62469	272.1
74	XG	SVK	3.180	632907	199054	54440	386126	17817	283404	105563	46802	16711	70509	667	-6822	49973	323.2
75	XG	SVN	3.934	103912	26411	73274	3868	483	170835	103668	3561	13337	36492	0	-2	13779	574.9
76	XG	ESP	2.595	9479989	3652517	1849052	242247	-562097	11648890	9843270	940721	59932	728307	17000	1	59660	425.9
77	XG	SWE	4.381	2501400	570967	110992	627036	18138	1967217	1600954	113900	40800	71066	0	0	140497	216.1
78	XG	GBR	5.730	6612833	1154000	294413	1365075	-193121	5735293	3631196	175000	44333	1443446	0	-1	441318	250.5
79	XG	CHE	6.201	268609	43318	244908	2071	-9246	520692	360704	7767	2833	83810	14553	-1	51027	380.8
80	XG	NOR	3.521	797769	226549	113832	303	-66510	977807	751957	38133	35633	60462	0	-1	91622	431.5
81	XG	XEF	0.000	0	0	17085	7	0	17078	9648	0	0	3250	1915	-1	2265	341.8
82	XG	ALB	2.206	37200	16860	11741	0	-476	31028	31028	4433	2996	7887	476	0	2896	473.2
83	XG	BGR	3.254	885712	272202	33751	462956	23426	433081	198909	44862	19225	130259	23271	-5096	21651	225.2
84	XG	BLR	2.901	4932265	1700092	55814	150025	-5952	4844007	3489115	609400	158690	100828	28590	-1	457384	249.2
85	XG	HRV	3.519	299134	84994	61583	34308	34	326375	225257	13249	6262	72772	0	0	8834	256.5
86	XG	ROU	2.416	1785988	739242	286319	715582	40476	1316248	645705	159694	90123	348198	317	-4188	76400	337.8
87	XG	RUS	1.883	23505460	12480675	384123	2514239	-1891333	23266677	14763814	4056633	377388	2196869	261	-2	1871714	294.4
88	XG	UKR	2.129	11513733	5408800	56895	4295647	-750480	8025461	5578914	672183	253324	604762	6191	-537	910625	311.0
89	XG	XEE	1.761	232263	131908	15392	109670	-4633	142618	86275	22912	7053	14797	0	2	11580	391.3
90	XG	XER	3.025	800035	264449	83631	19168	0	864498	600772	38459	22626	145474	5584	0	51582	302.0
91	XG	KAZ	1.339	2613627	1951527	64085	436938	54897	2185876	1401010	279847	199550	97281	0	-1	207789	278.4
92	XG	KGZ	2.055	256122	124619	14829	387	0	270564	222172	30629	5210	3636	0	3	8913	264.8
93	XG	XSU	1.941	400258	206206	86223	0	-633	487114	257289	30712	9750	32726	0	0	156637	348.2

Table A-4-5. Launching pad data of soybeans in 2010 (continued).

CNO	PID	CID	YSB	QSB	ASB	IMSB	EXSB	STCSB	QDSB	QDLSB	QDSB	QDSSB	QDWSB	QDPSB	QDOSB	QDXSB	QDFSB	PSB
Country No.	Prod. code	Country code	Yield t ha ⁻¹	Production t	Area t	Imports t	Exports t	Stock change. t	Total Supply t	Feed demand t	Seed demand t	Loss t	Processing demand t	Other demand t	Error t	Food demand t	Farmprice USDt ⁻¹	
47	SB	SLV	1.863	4618	2479	328	17	0	4929	0	102	0	0	0	0	0	4827	321.2
48	SB	XCA	1.599	610	382	27	0	67	570	0	17	0	0	33	0	0	520	434.6
49	SB	DOM	0.000	0	0	2956	0	0	2956	0	0	0	0	2956	0	0	0	434.6
50	SB	IAM	0.000	0	0	287	27	0	259	0	0	0	0	248	0	0	11	434.6
51	SB	PRI	0.000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	434.6
52	SB	TTO	0.000	0	0	6717	8	0	6708	0	0	0	132	6467	0	110	608.0	608.0
53	SB	XCB	0.000	0	0	143002	0	-40301	183303	12500	0	0	0	109470	0	1	61332	434.6
54	SB	AUT	2.814	91752	32607	100503	46154	0	146101	110338	3654	0	0	17333	0	0	14775	428.9
55	SB	BEL	0.000	0	0	61775	270410	0	347364	232368	0	0	2110	112094	0	0	792	501.4
56	SB	CYP	0.000	0	0	79	0	0	79	58	0	0	0	0	0	0	21	525.4
57	SB	CZE	2.061	15892	7710	26487	1650	289	40441	23733	0	305	424	36667	0	0	3044	443.1
58	SB	DNK	0.000	0	0	93780	206	-167	93573	0	0	0	0	69513	0	0	327	501.4
59	SB	EST	0.000	0	0	822	854	0	135	105	0	0	0	0	0	0	30	346.3
60	SB	FIN	0.000	0	0	7547	2	0	7545	0	0	0	0	7279	0	0	266	373.3
61	SB	FRA	2.734	122253	44710	620016	25846	0	716423	166003	2600	0	0	544867	0	0	2953	501.4
62	SB	DEU	1.500	2000	1333	3248876	41078	73264	3136534	73333	0	12000	0	2999067	0	0	52134	501.4
63	SB	GRC	2.085	4100	1967	283050	118	0	287032	1500	0	0	0	285401	0	0	132	525.4
64	SB	HUN	2.323	85327	36735	18406	32326	-3957	75364	13382	3284	114	0	58533	0	0	51	421.9
65	SB	IRL	0.000	0	0	21940	1273	0	20667	15245	0	0	0	4400	0	0	1022	501.4
66	SB	ITA	3.445	528446	153385	1397064	119437	88571	1717502	66734	20000	39665	0	1590433	0	0	670	241.4
67	SB	LVA	0.000	0	0	20650	8733	-5833	17750	1987	0	264	0	15433	0	0	66	346.3
68	SB	LIT	0.000	0	0	1012	189	0	721	667	0	0	0	0	0	0	46	346.3
69	SB	LUX	0.000	0	0	1012	189	0	823	528	0	10	0	272	0	0	13	501.4
70	SB	MLT	0.000	0	0	51	0	0	51	37	0	0	0	0	0	0	14	241.4
71	SB	NLD	0.000	0	0	3247446	1133453	-255386	2369379	0	0	0	0	2368333	0	0	1045	501.4
72	SB	POL	1.529	263	172	14900	1138	0	14026	0	0	295	0	12019	0	0	1711	346.3
73	SB	PRT	0.000	0	0	804526	17464	6	787056	40667	0	6937	0	739333	0	0	119	442.9
74	SB	SVK	1.778	25448	14310	9471	10608	0	24311	0	0	348	0	23867	0	0	96	424.1
75	SB	SVN	2.748	258	94	206646	203638	333	2933	0	20	2079	0	3098333	0	0	833	443.1
76	SB	ESP	2.330	2106	904	3080173	6397	-39333	3115216	15500	87	408	0	18869	0	0	888	442.9
77	SB	SWE	0.000	0	0	20203	266	0	19936	0	0	0	0	0	0	0	1067	501.4
78	SB	GBR	0.000	0	0	851061	6366	0	844696	154131	0	0	0	685600	0	0	4965	501.4
79	SB	CHE	2.826	3125	1106	23736	259	-1333	27936	0	0	0	0	26167	0	0	1769	501.4
80	SB	NOR	0.000	0	0	412350	2	0	412348	12167	0	0	0	399776	0	0	405	501.4
81	SB	XEF	0.000	0	0	37	0	0	37	6	0	0	0	0	0	0	31	501.4
82	SB	ALB	1.732	533	308	20	0	0	553	0	37	11	0	493	0	0	13	717.9
83	SB	BGR	1.579	909	576	9619	1632	1667	7230	0	31	379	0	6820	0	0	379	502.5
84	SB	BLR	0.000	0	0	5272	66	0	5206	0	0	0	0	0	0	0	5206	373.3
85	SB	HRV	2.606	138670	53215	11902	44607	5000	100965	1699	2259	4722	0	92267	0	0	19	419.0
86	SB	ROU	2.053	125615	61178	23643	40035	62100	47123	9847	4300	0	0	32926	0	0	50	376.1
87	SB	RUS	1.300	1307347	1005967	977160	2573	0	2281934	644982	118767	22794	0	1490500	0	0	4890	373.3
88	SB	UKR	1.801	1662700	923167	1765	521342	0	1143123	628477	94933	16639	0	402667	0	0	408	346.3
89	SB	XEE	1.492	79508	53302	10519	33206	10667	46155	5245	3733	0	0	37167	0	0	10	361.2
90	SB	XER	2.751	451859	164224	64680	53723	53333	409483	30183	6821	25145	0	340500	2225	1	4609	419.7
91	SB	KAZ	1.854	113797	61367	1992	4221	0	111568	70413	3000	1154	0	36567	0	0	435	322.1
92	SB	KGZ	1.010	67	66	1738	0	0	1805	1769	0	0	0	0	0	0	35	322.1
93	SB	XSU	0.185	22	119	4470	0	-333	4825	559	0	0	0	4267	0	0	0	322.1

Table A-4-6. Launching pad data of other oil crops in 2010.

CNO	PID	Country	CID	YXS	Yield	QXS	Production	AXS	Area	IMXS	Imports	EXXS	Exports	STCXs	Stock change.	QDXS	Total Supply	QDLXS	Feed demand	QDSXS	Seed demand	QDWXS	Loss	QDPXS	Processing demand	QDOXS	Other demand	QDXXS	Error	QDFXS	Food demand	PXS	Farm price
No.	code	code	code	tha ⁻¹	t	t	t	t	t	t	t	t	t	t	t	t	t	t	t	t	t	t	t	t	t	t	t	t	t	t	t	t	USD ^t
1	XS	AUS		1.302	2930464	2250658	110231	1563627	-16400	1493467	0	23174	762	1281144	70531	-3740	121596	1045.6															
2	XS	NZL		1.642	4964	3023	34273	2107	0	37131	14015	89	1967	0	-259	21272	1045.6																
3	XS	XOC		1.964	1391061	708430	4695	217458	-23373	1201670	274	23	27663	637976	-2747	191761	437.0																
4	XS	CHN		2.110	40962732	19413315	2925016	595718	96667	43195363	3791721	871562	31543038	569265	-1436	4763453	937.7																
5	XS	HKG		0.000	0	0	29230	7510	-720	22440	1330	0	2852	246	-3	17526	937.7																
6	XS	JPN		1.648	14760	8954	2630972	894	-37235	2682072	98344	306	10098	1176	3	181538	5870.2																
7	XS	KOR		0.783	52476	67059	349490	989	0	400977	0	962	4722	4	-1	168430	8157.3																
8	XS	MNG		1.118	6333	5667	3497	7121	0	2710	2355	0	0	6	349	937.7																	
9	XS	TWN		3.802	100977	26559	75893	10922	631	165317	21979	2985	56029	530	-1	82461	937.7																
10	XS	XEA		1.129	21454	19000	1377	2	0	22830	5	760	20694	13	1	1349	8157.3																
11	XS	BRN		1.637	339	207	1272	0	-650	2262	60	0	52	32	0	2117	2022																
12	XS	KHM		1.485	114623	77206	324	900	-2680	116727	0	1766	1017	1332	0	51926	1460.2																
13	XS	IDN		2.611	24818468	9506712	251439	793836	-52320	24328391	7	9600	1887379	5006532	-169639	5397452	337.9																
14	XS	LAO		1.270	51103	40246	4	5432	8267	37408	2	1881	39	15843	0	19643	786.1																
15	XS	MYS		1.178	5187387	4404602	305770	107014	7333	5378810	14522	9	26989	17403	1	246669	222.9																
16	XS	PHL		4.311	15531385	3602480	459527	691478	666539	14632895	85771	162347	10458	3043741	0	412569	298.5																
17	XS	SGP		0.000	0	15	0	0	0	0	0	0	0	0	0	0	222.9																
18	XS	THA		1.892	1801878	952613	68670	59943	-1138	1811744	26	1019	67133	2027	-995	927902	587.7																
19	XS	VNM		2.822	1202687	426230	48179	120111	6667	1124088	0	909	2705	54125	-84	238554	1158.3																
20	XS	XSE		0.702	2617600	3727764	666	68973	0	2549293	0	126968	72275	1620583	0	607970	587.7																
21	XS	BGD		1.071	406609	379744	284905	13809	8267	677705	0	8110	15956	1577	0	25892	498.2																
22	XS	IND		1.215	36311883	29882960	64336	1025652	131182	35219385	4403893	564191	1239544	20863557	14528	8143165	436.1																
23	XS	NPL		0.787	316887	402782	88582	389	16510	388570	0	2419	3817	366114	6	16215	816.7																
24	XS	PAK		1.344	4862501	3618886	848067	31635	112167	5566767	1016390	151947	115493	3582213	-1097	269783	409.2																
25	XS	LKA		4.975	2084573	418973	4251	240385	-15503	1863943	2	328	723	502214	3	1360674	810.0																
26	XS	XSA		0.773	69051	89291	184	11537	-1667	59365	0	1957	1232	33536	0	22640	717.0																
27	XS	CAN		1.850	14033375	7583867	422226	8449857	-388333	6394078	58576	79286	441039	5588667	52095	202960	504.8																
28	XS	USA		1.064	5946163	5591040	1374288	2221538	226934	4871979	2062197	176044	35821	3702415	62496	527415	561.3																
29	XS	MEX		3.080	1663161	539902	2288360	63173	38108	3850239	593139	13102	26686	2724100	1	265707	1098.2																
30	XS	XNA		0.000	0	0	61	0	0	0	0	0	0	0	0	61	561.3																
31	XS	ARG		0.449	1154386	2570723	19028	612016	-3852	565250	0	53590	8931	424865	244442	-186102	19524	363.0															
32	XS	BOL		0.233	89653	384349	3760	17012	0	76401	1598	3896	455	62219	63	8170	673.7																
33	XS	BRA		3.211	5798083	1805776	169545	98807	-1000	5869821	0	69539	304827	2211999	489520	0	2797535	667.5															
34	XS	CHL		3.296	126350	38333	36279	8556	1000	153073	1062	556	2180	99761	2298	47384	237.8																
35	XS	COL		1.294	338068	261259	18412	335	40	356105	0	1650	490	231312	12297	-169	110356	453.4															
36	XS	ECU		0.589	130963	222420	3917	953	0	133926	0	1248	1012	111327	1872	-415	18883	772.0															
37	XS	PER		0.664	240589	362561	4057	85790	-8667	167523	0	3992	3201	139822	5089	-4713	20131	461.5															
38	XS	URY		2.128	170646	80199	122331	35710	-3037	260304	69827	2101	8054	77078	2411	0	100832	795.2															
39	XS	URY		0.643	23937	37199	15820	430	0	39328	24	324	1257	11879	4170	0	21673	390.1															
40	XS	VEN		0.922	162094	175828	6061	24040	-1333	145448	47	490	17178	133082	255	-15684	10078	1133.8															
41	XS	XSM		4.090	84950	20769	6820	14538	0	77232	6199	6820	15600	365	-246	24746	1291.4																
42	XS	CRI		1.314	82166	62525	25036	47593	-33	59643	869	31	1550	42924	65	-21	14224	67.7															
43	XS	GTM		1.204	120720	100281	19392	24651	-342	115803	2143	869	115803	8335	-1865	61886	1098.2																
44	XS	HND		0.931	101802	109400	5499	879	67	106355	1008	55	1	91845	98	-16	13363	297.0															
45	XS	NIC		2.884	139073	48227	2033	80507	-7549	68148	28	1722	3936	48250	112	-3568	17668	750.5															
46	XS	PAN		1.567	17014	10861	30515	15056	0	32473	162	4	16	4070	19011	-3655	12866	360.5															

Table A-4-6. Launching pad data of other oil crops in 2010 (continued).

CNO	PID	CID	YXS	QXS	AXS	IMXS	EXXS	STCXs	QDXS	QDLXS	QDSXS	QDWXS	QDPXS	QDOXS	QDXXS	QDFXS	PXS
Country No.	Prod. code	Country code	Yield t/ha ¹	Production t	Area t	Imports t	Exports t	Stock change. t	Total Supply t	Feed demand t	Seed demand t	Loss t	Processing demand t	Other demand t	Error t	Food demand t	Farm price USD/t ¹
47	XS	SLV	5.511	70544	12801	9237	3688	0	76092	188	195	1680	23270	127	1	50630	1275.2
48	XS	XCA	2.398	736	307	159	26	-20	889	2	2	0	0	140	0	745	446.7
49	XS	DOM	2.653	133140	50177	1843	24461	0	110522	0	76	140	47323	19	0	62964	550.9
50	XS	IAM	5.446	282959	51961	2059	63	0	284956	156	0	0	106013	140237	-12	38562	2045.1
51	XS	PRI	0.000	0	327	0	0	0	0	0	0	0	0	0	0	0	238.7
52	XS	TTO	6.287	16173	2573	5990	4084	0	18079	19	83	0	10751	2425	-3802	8604	492.1
53	XS	XCB	1.601	160340	100120	373663	736	2344	530924	369070	1110	19588	15933	7144	-70	118149	2822.5
54	XS	AUT	1.742	192063	110233	327312	103748	3549	412077	1321	3549	9071	375322	234	0	25898	2038.1
55	XS	BEL	2.394	53742	22450	2732791	486308	67133	2233092	503115	2000	157097	1520527	3083	-2	47273	267.6
56	XS	CYP	1.258	14662	11651	4980	109	19533	19533	357	9	813	9198	21	0	9135	2993.9
57	XS	CZE	3.388	1128811	472752	142323	388516	-21135	903753	47851	3750	21503	802243	1887	0	26518	718.9
58	XS	DNK	3.573	575236	161011	249683	145277	1538	678104	154503	7579	87	500686	275	0	14974	462.9
59	XS	EST	1.526	137214	89921	20237	79761	-3532	81222	26324	0	0	53800	0	7	1091	697.5
60	XS	FIN	1.315	144500	109867	140955	837	0	284618	168	0	2	272838	186	0	11423	468.5
61	XS	FRA	2.329	5406515	2321169	1079959	1631756	78333	4776385	223026	10617	0	4268445	98798	1	175499	799.7
62	XS	DEU	3.630	5309985	1462815	3431824	367672	-59097	843234	87431	5350	118418	7976830	2537	0	242668	468.2
63	XS	GRC	2.075	2446591	1179096	99623	312309	-54229	2288135	8928	33698	26720	1912385	132701	-1	173703	1339.3
64	XS	HUN	0.689	564725	819898	51655	643195	-64039	37223	4900	2246	2346	10818	8674	-25	8265	822.2
65	XS	IRL	4.045	36000	8900	77284	9226	0	104058	55192	133	0	33749	1349	0	13634	799.7
66	XS	ITA	2.576	3384284	1313714	412612	57923	27305	3711667	424	659	8344	3473285	3830	1	225125	709.1
67	XS	LVA	1.978	219602	111039	68016	181620	-1438	107436	6331	923	2367	93733	797	-664	3948	560.5
68	XS	LTU	1.877	442863	236000	77997	277379	16667	226815	120734	42183	0	58767	117	0	5014	706.0
69	XS	LUX	3.538	16534	4673	8006	19485	-717	5771	991	45	497	3750	63	-988	1414	413.3
70	XS	MLT	0.941	5	6	2555	4	0	2556	94	0	2	32	242	0	2186	753.6
71	XS	NLD	2.523	12503	4956	2384877	786816	192365	1418199	24528	168	0	1316245	27482	-265	50040	914.5
72	XS	POL	2.500	2224782	890023	481028	281572	21625	2402613	3686	83316	1697	2242735	4289	0	66891	578.8
73	XS	PRY	1.245	451615	362791	310381	55347	-6019	712669	3342	113	1157	678142	0	0	29916	369.1
74	XS	SVK	1.405	353935	251950	71135	268814	-24933	181189	3623	231	12851	147836	619	0	16028	875.6
75	XS	SVN	2.488	14865	5974	9786	13740	0	10911	136	51	314	4928	1256	0	4226	426.0
76	XS	ESP	2.224	7517721	3379727	289426	452115	-13979	7369012	84129	3343	26642	7089943	67	0	164887	556.5
77	XS	SWE	2.651	303167	114360	153067	31140	-200	425293	84197	1995	6	315309	400	0	23386	481.8
78	XS	GBR	3.505	2365667	675000	447677	386810	89617	2336916	2726973	11993	0	1859877	64322	0	123751	461.9
79	XS	CHE	2.748	70079	25504	33179	1114	0	102143	5442	26	92	82178	0	0	14451	819.0
80	XS	NOR	1.660	8553	5153	39045	1299	-733	47033	9093	26	2	27636	390	1	9886	796.1
81	XS	XEF	0.000	0	0	3087	0	0	3087	1732	0	0	0	194	1	1160	799.7
82	XS	ALB	1.965	71719	36499	3701	1479	17	73923	62	111	1433	7759	312	0	64246	987.2
83	XS	BGR	0.493	460598	934015	51272	442658	-19783	88994	1121	3730	10136	48531	402	-149	25224	793.3
84	XS	BLR	1.238	466120	376629	16366	68854	-46767	460399	52154	28140	5260	366063	0	0	8782	328.8
85	XS	HRV	1.336	95007	71090	8924	37234	-14683	81381	1029	146	709	40932	2084	-1	36482	756.6
86	XS	ROU	0.588	768469	1307046	173923	813432	-105000	233960	4515	3704	10232	173349	2300	0	39860	402.9
87	XS	RUS	0.157	1115752	7113967	290855	240468	43286	1122852	48590	48590	11807	411023	6112	0	273034	332.7
88	XS	UKR	0.310	1722272	5558231	28841	1415182	113092	220839	47881	34333	19223	89177	8484	0	21741	360.0
89	XS	XEE	0.179	52780	294523	4540	53685	-2100	5735	358	0	0	2000	60	-245	3563	329.6
90	XS	XER	0.301	60346	200613	37982	16403	-6183	88106	3228	202	1634	54233	3522	372	24917	492.0
91	XS	KAZ	0.360	55132	1529673	12801	95867	34010	434256	114539	31190	17515	261293	0	0	9719	364.5
92	XS	KGZ	0.708	60365	85247	608	66	-5083	65991	13049	2733	1191	48489	133	-6	401	364.5
93	XS	XSU	1.179	2525979	2142936	428	48835	-128000	2605573	365544	109943	16753	2109693	0	0	3640	612.2

Table A-4-7. Launching pad data of soybean oil in 2010.

CNO	PID	CID	YOS	QOS	QDPSB	IMOS	EXOS	STCOS	QDOS	QDLOS	QDSOS	QDWOS	QDPOS	QDOOS	QDXOS	QDFOS	POS
Country No.	Prod. code	Country code	% of process	Production	Processing supply	Imports	Exports	Stock change	Total Supply	Feed demand	Seed demand	Loss	Processing demand	Other demand	Error	Food demand	Price
				t	t	t	t	t	t	t	t	t	t	t	t	t	USD/t
1	OS	AUS	17.500	8558	48904	23441	5824	0	26175	0	0	0	0	328	0	25847	472.7
2	OS	NZL	0.000	0	0	1496	1494	-3000	16502	0	0	0	0	3067	0	13436	472.7
3	OS	XOC	0.000	0	0	4590	158	-1683	6115	0	0	0	0	586	0	5530	472.7
4	OS	CHN	17.879	8621767	48222000	1625037	59886	0	10186918	0	0	0	0	7600000	0	2586918	708.1
5	OS	HKG	0.000	0	0	55920	5791	0	50128	0	0	0	0	9806	0	40323	708.1
6	OS	JPN	19.160	448714	2341967	24623	1123	-50000	522214	0	0	3140	0	6743	0	512331	1580.5
7	OS	KOR	18.056	164733	912333	303623	18155	0	450201	0	0	0	0	0	0	450201	2664.2
8	OS	MNG	0.000	0	0	7500	0	0	7500	0	0	0	0	0	0	7500	708.1
9	OS	TWN	18.982	426267	2245667	7190	14380	1667	417410	0	0	0	0	18333	0	399076	708.1
10	OS	XEA	18.054	46867	259592	35742	1	1333	81274	0	0	0	0	0	0	81274	2664.2
11	OS	BRN	0.000	0	0	44	0	-7	50	0	0	0	0	0	0	50	733.2
12	OS	KHM	18.000	10380	57667	224	0	500	10104	0	0	0	0	0	0	10104	627.9
13	OS	IDN	18.000	389399	2163327	18020	4	0	407415	0	0	0	0	0	0	407415	733.2
14	OS	LAO	17.998	1187	6595	0	0	0	1187	0	0	0	0	0	0	1187	723.7
15	OS	MYS	20.000	112058	560288	102776	133659	16667	64508	0	0	0	0	0	0	64508	733.2
16	OS	PHL	18.001	10474	58187	8136	340	0	18270	0	0	0	0	0	0	18270	467.6
17	OS	SGP	0.000	0	0	0	0	0	0	0	0	0	0	0	0	0	733.2
18	OS	THA	18.261	246467	1349700	233	20456	0	226243	0	0	0	0	0	0	226243	459.0
19	OS	VNM	19.000	13233	69647	105735	0	13333	105634	0	0	0	0	0	0	105634	747.1
20	OS	XSE	18.000	36264	201464	1700	0	0	37964	0	0	0	0	0	0	37964	459.0
21	OS	BGD	0.000	0	0	389500	0	-3000	392500	0	0	0	0	83333	0	309167	499.8
22	OS	IND	17.939	1862000	10379667	988222	4424	27217	2818581	0	0	0	0	866667	0	1951915	268.1
23	OS	NPL	16.000	8257	51608	92295	0	0	100552	0	0	0	0	0	0	100552	708.4
24	OS	PAK	0.000	0	0	59721	8163	12337	39221	0	0	0	0	9387	0	29834	400.2
25	OS	LKA	18.009	703	3902	196	0	0	899	0	0	0	0	0	0	899	622.2
26	OS	XSA	0.000	0	0	12667	0	-67	12734	0	0	0	0	83	0	12650	565.4
27	OS	CAN	18.043	237833	1318183	82250	66681	-11667	265070	0	0	0	0	65850	0	199220	392.9
28	OS	USA	19.220	8798620	45777327	171846	1472056	-323539	7821949	0	0	203126	0	413039	0	7205783	408.7
29	OS	MEX	15.000	333000	2220000	236639	6332	0	563307	0	0	0	0	4822	0	558484	434.6
30	OS	XNA	0.000	0	0	0	0	0	0	0	0	0	0	0	0	0	408.7
31	OS	ARG	19.035	6628594	34823800	4096	4678967	23333	1930390	0	0	0	0	1817797	0	112594	275.6
32	OS	BOL	16.698	265958	1592716	296	219167	-11667	58754	0	0	0	0	42683	0	16072	320.7
33	OS	BRA	19.938	6721667	33712327	15326	1652589	0	5084403	0	0	0	0	2432317	-1	2652087	384.2
34	OS	CHL	18.000	11392	63287	182535	1484	0	192443	0	0	0	0	115092	0	77350	320.7
35	OS	COL	17.891	62600	349900	215840	13285	0	265155	0	0	0	0	24262	-1	240893	555.0
36	OS	ECU	18.050	12000	66483	114135	10785	0	115350	0	0	0	0	38667	0	76683	497.6
37	OS	PER	19.388	336867	1737540	2581	246420	32333	60694	0	0	0	0	0	0	60694	359.9
38	OS	URY	18.002	712	3953	316817	895	0	316634	0	0	0	0	227715	0	88919	626.0
39	OS	URY	17.500	9380	53601	19373	526	3333	24894	0	0	0	0	0	0	24894	420.1
40	OS	VEN	16.000	24949	155928	385953	0	0	410902	0	0	0	0	127713	0	283189	608.0
41	OS	XSM	0.000	0	0	10275	1456	-133	8952	0	0	0	0	2533	0	6419	2143.4
42	OS	CRI	16.847	38433	228133	4734	6285	0	36883	0	0	0	0	5900	0	30983	555.0
43	OS	GTM	21.255	7733	36383	85039	8648	0	84124	0	0	0	0	21600	0	62524	434.6
44	OS	HND	14.992	565	3766	3950	14	-533	5034	0	0	0	0	0	0	5034	321.2
45	OS	NIC	18.005	579	3218	39739	6748	0	33570	0	0	0	0	12467	0	21104	321.2
46	OS	PAN	0.000	0	0	28307	0	-333	28641	0	0	0	0	0	0	28641	555.0

Table A-4-7. Launching pad data of soybean oil in 2010. (continued)

CNO	PID	CID	YOS	QOS	QDPSB	IMOS	EXOS	STCOS	QDOS	QDLOS	QDSOS	QDWOS	QDPOS	QDOOS	QDXOS	QDFOS	POS
Country No.	Prod. code	Country code	% of process	Production	Processing supply	Imports	Exports	Stock change.	Total Supply	Feed demand	Seed demand	Loss	Processing demand	Other demand	Error	Food demand	Price
	t	t	%	t	t	t	t	t	t	t	t	t	t	t	t	t	USD ^{t-1}
47	OS	SLV	0.000	0	0	20337	4304	-1500	17532	0	0	0	0	0	0	17532	321.2
48	OS	XCA	20.000	7	33	358	80	47	238	0	0	0	0	0	0	238	434.6
49	OS	DOM	16.003	473	2956	133467	0	-3333	137273	0	0	0	0	40000	0	97273	434.6
50	OS	IAM	16.779	42	248	16322	136	-2667	18894	0	0	0	0	2525	0	16370	434.6
51	OS	PRI	0.000	0	0	0	0	0	0	0	0	0	0	0	0	0	434.6
52	OS	TTO	18.005	1164	6467	14308	139	0	15333	0	0	0	0	4933	0	10400	608.0
53	OS	XCB	25.431	27839	109470	116182	4196	4633	135192	0	0	0	0	14474	0	120718	434.6
54	OS	AUT	18.077	3133	17333	16828	2899	0	17062	1333	0	0	0	3395	0	12333	428.9
55	OS	BEL	18.185	20384	112094	128084	49438	3333	95697	23333	0	0	0	23030	0	49333	501.4
56	OS	CYP	0.000	0	0	11121	71	667	10383	0	0	0	0	6333	0	4050	525.4
57	OS	CZE	17.091	6267	36667	29877	3350	-11667	44460	0	0	0	0	23169	0	21291	424.1
58	OS	DNK	16.783	11667	69513	29928	29960	0	11634	0	0	0	0	3000	0	8634	501.4
59	OS	EST	0.000	0	0	6612	10050	-6067	2628	0	0	0	0	0	0	2628	373.3
60	OS	FIN	18.002	1310	7279	2397	3681	0	26	0	0	0	-2	28	0	0	373.3
61	OS	FRA	18.995	103500	544867	340860	43917	15000	250443	0	0	0	0	44030	0	250443	501.4
62	OS	DEU	19.078	572167	2999067	68058	312862	-146667	474030	0	0	0	0	47000	0	430000	501.4
63	OS	GRC	18.000	51372	285401	9470	3943	0	56899	0	0	0	0	0	0	9899	525.4
64	OS	HUN	17.995	10533	58533	6845	675	0	16703	0	0	0	0	0	0	16703	421.9
65	OS	IRL	18.000	792	4400	44560	1020	3000	41332	0	0	0	0	28333	0	12999	501.4
66	OS	ITA	17.945	285400	1590433	130379	26225	20000	369554	0	0	0	0	2500	0	367054	241.4
67	OS	LVA	17.495	2700	15433	11898	1159	-1000	14439	0	0	0	0	4198	0	10241	346.3
68	OS	LTU	0.000	0	0	16934	7998	-2333	11269	0	0	0	0	0	0	11269	346.3
69	OS	LUX	18.137	49	272	648	222	0	475	70	0	0	0	35	0	371	501.4
70	OS	MLT	0.000	0	0	1939	0	0	1939	0	0	0	0	939	0	1000	241.4
71	OS	NLD	19.244	455767	2368333	66528	453488	-53718	122525	0	0	0	4320	37732	0	80474	501.4
72	OS	POL	15.775	1896	12019	75753	9383	0	70086	0	0	0	0	3240	0	66846	346.3
73	OS	PRT	17.002	125700	739333	119740	59668	0	185772	0	0	0	0	146667	0	39105	442.9
74	OS	SVK	17.000	4057	23867	3704	110	0	7651	0	0	0	0	0	0	7651	424.1
75	OS	SVN	0.000	0	0	27463	9109	709	17645	0	0	0	0	3600	0	14046	443.1
76	OS	ESP	17.593	545100	3098333	154252	290731	130000	278621	0	0	0	0	96181	0	182440	442.9
77	OS	SWE	17.999	3396	18869	47576	26752	0	24221	0	0	0	0	0	0	24221	501.4
78	OS	GBR	18.222	124933	685600	130731	25163	0	230502	0	0	225	0	1675	0	228601	501.4
79	OS	CHE	18.344	4800	26167	4091	216	0	8675	0	0	0	0	0	0	8675	501.4
80	OS	NOR	18.002	71967	399776	27209	72168	-1000	28008	0	0	0	3	0	0	28005	501.4
81	OS	XEF	0.000	0	0	2885	0	0	2885	0	0	0	0	1233	0	1652	501.4
82	OS	ALB	15.968	79	493	122	0	0	201	0	0	0	0	0	0	201	717.9
83	OS	BGR	16.985	1158	6820	11002	490	0	11670	0	0	0	0	0	0	11670	502.5
84	OS	BLR	0.000	0	0	15543	43	0	15500	0	0	0	0	0	0	15500	373.3
85	OS	HRV	17.883	16500	92267	1830	5139	0	13191	0	0	0	0	233	0	12957	419.0
86	OS	ROU	19.519	6427	32926	3960	2000	-2500	10887	0	0	0	0	187	0	10700	376.1
87	OS	RUS	17.518	261101	1490500	18856	154936	-36667	161688	0	0	0	0	66241	0	95447	373.3
88	OS	UKR	17.565	70729	402667	65	37594	667	32534	0	0	0	0	200	0	32333	346.3
89	OS	XEE	16.497	6131	37167	46	5762	167	17447	0	0	0	0	0	0	249	361.2
90	OS	XER	18.029	61390	340500	20263	64606	-400	17447	0	0	0	0	10002	0	7446	419.7
91	OS	KAZ	17.524	6408	36567	19	1133	0	5294	0	0	0	0	0	0	5294	322.1
92	OS	KGZ	0.000	0	0	966	0	0	966	0	0	0	0	0	0	966	322.1
93	OS	XSU	18.359	783	4267	11300	0	0	12083	0	0	0	0	0	0	12083	322.1

Table A-4-8. Launching pad data of other vegetable oils in 2010.

CNO	Country No.	PID	CID	YOX	QOX	QDPXS	IMOX	EXOX	STCOX	QDOX	QDLOX	QDSOX	QDWOX	QDPOX	QDOOX	QDXOX	QDFOX	POX
		Prod. code	Country code	% of process	Production	Processing supply	Imports	Exports	Stock change	Total Supply	Feed demand	Seed demand	Loss	Processing demand	Other demand	Error	Food demand	Price
				%	t	t	t	t	t	t	t	t	t	t	t	t	t	USD t ⁻¹
1	OX	AUS	821702	64138	821702	1281144	580515	308403	5000	1088814	0	0	0	0	148688	0	940127	5647
2	OX	NZL	286867	286867	5643	1967	166251	6187	-3000	168707	0	0	0	178	112738	1	55789	2946
3	OX	XOC	130955	37769	130955	346721	51605	92266	-3949	94243	106	0	0	0	60388	-101	33850	7538
4	OX	CHN	29458875	93393	17028427	31543038	17028427	307522	0	46179780	0	0	249657	0	27954613	-1458	17976967	7815
5	OX	HKG	1882	65989	1882	2852	262411	87067	-5240	182466	0	0	0	0	76925	-17	105558	7815
6	OX	JPN	2688958	112480	2688958	2390607	1782352	98866	-87193	4459637	0	0	11922	0	1357038	1	3090676	37254
7	OX	KOR	281345	124018	281345	226859	1796234	54649	-2667	2025597	0	0	0	84	812728	385	1212399	48743
8	OX	MNG	0	0	0	0	27361	0	0	27361	0	0	0	0	3212	-1	24150	7815
9	OX	TWN	466246	832156	466246	56029	560928	74767	1367	951040	5	0	0	0	342771	-2	608266	7815
10	OX	XEA	106585	515043	106585	20694	67924	21	-200	174687	0	0	0	0	1026	0	173661	48743
11	OX	BRN	0	0	0	0	14993	0	-1306	16299	0	0	0	0	8081	-1	8218	2207
12	OX	KHM	30521	50294	30521	60686	20560	26569	-20768	47770	0	0	0	0	2895	-1	44876	9512
13	OX	IDN	45361935	371909	45361935	12197059	205590	37361567	7333	8198624	0	0	0	4908	5246211	-12066	2959572	5217
14	OX	LAO	13579	85708	13579	15843	593	0	0	14172	0	0	0	0	556	0	13616	6094
15	OX	MYS	36229580	714134	36229580	5073217	3889612	37884857	-184167	2418501	0	0	196950	9557	1620857	-292	591430	4464
16	OX	PHL	3286800	30104	3286800	10918008	597067	2062587	113026	1708254	0	0	0	0	838393	-26031	895892	3502
17	OX	SGP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4464
18	OX	THA	3294417	404406	3294417	814632	309731	679988	-6700	2930860	0	0	0	0	2197331	-4147	737675	4303
19	OX	VNM	392403	47399	392403	827878	1308318	4105	13333	1683282	0	0	0	0	1218879	0	464404	2687
20	OX	XSE	1186301	73202	1186301	1620583	801889	830	1400	1985960	0	0	0	0	1241372	0	744588	4303
21	OX	BGD	316959	50619	316959	626170	2300371	3187	-71333	2685477	0	0	0	0	1165931	0	1519546	4356
22	OX	IND	13989397	67052	13989397	20863557	12888136	1058889	358913	25459732	0	0	0	8	7837960	-331	17622095	3601
23	OX	NPL	272719	74490	272719	366114	290784	24935	9179	529388	0	0	0	0	157141	0	372294	6685
24	OX	PAK	1853990	51755	1853990	3582213	403250	156202	21724	5708314	0	0	0	0	1721957	-2	3986358	3699
25	OX	LKA	26747	26747	134329	502214	282442	19925	16667	380180	0	0	0	0	285728	-1	94452	6974
26	OX	XSA	12505	37289	12505	33536	558499	0	-1900	572904	0	0	0	0	417442	-1	155463	2905
27	OX	CAN	5266645	94238	5266645	5588667	1000990	4464357	-208333	2011612	0	0	0	33411	492293	-53251	1539159	4325
28	OX	USA	13749975	371379	13749975	3702415	7006604	4726755	-486436	16516259	0	0	231252	0	5521619	-587064	11350451	4833
29	OX	MEX	2048836	75211	2048836	2724100	1626291	83937	-4100	3595290	0	0	0	59725	1582727	0	1952839	5784
30	OX	XNA	0	0	0	0	2323	0	60	2263	0	0	0	0	567	0	1695	4833
31	OX	ARG	8320952	1958495	8320952	424865	50325	5993192	104983	2273101	0	0	0	8870	1852415	-195485	607301	2618
32	OX	BOL	577636	577636	359401	62219	5563	310449	-36667	91182	0	0	0	0	46665	-1	44518	4791
33	OX	BRA	8386451	379134	8386451	2211999	649778	2035601	176667	6823961	0	0	0	7510	2773954	-34265	4076761	2895
34	OX	CHL	71762	71934	71762	99761	272948	27953	6515	310243	0	0	0	0	155622	-1094	155715	2367
35	OX	COL	1733506	749424	1733506	231312	493745	334365	86600	1806285	0	0	0	7450	847279	0	951556	6230
36	OX	ECU	643156	335534	643156	111327	153554	467193	40000	362365	0	0	0	0	64013	-52975	351327	7683
37	OX	PER	469151	335534	469151	139822	14983	322179	36667	125288	0	0	0	0	36655	-9756	98389	4369
38	OX	URY	193561	251124	193561	77078	411818	16954	0	588425	0	0	0	0	318938	1	269486	6897
39	OX	URY	25132	11879	25132	11879	81295	5377	4000	97050	0	0	0	0	47865	-1388	50573	3429
40	OX	VEN	265746	199685	265746	133082	795540	339	0	1060946	0	0	0	0	387097	1	673848	10119
41	OX	XSM	5459	23530	5459	23198	26443	4092	-440	28249	0	0	0	0	12764	2	15483	16260
42	OX	CRI	490563	1142872	490563	42924	57871	296623	-1533	253345	0	0	0	0	156162	-1	97183	4117
43	OX	GTM	944996	423913	944996	44859	198765	406621	-17717	233774	0	0	0	148	99158	-3243	137711	1549
44	OX	HND	678243	738462	678243	91845	74300	349969	5463	397112	0	0	0	0	231127	0	165985	4548
45	OX	NIC	129801	129801	62629	48250	135099	49368	-575	148936	0	0	0	0	64599	1	84336	5172
46	OX	PAN	28484	699803	28484	4070	52131	14787	9137	56691	0	0	0	0	15347	0	41345	4113

Table A-4-8. Launching pad data of other vegetable oils in 2010 (continued).

CNO	Country No.	PID	CID	YOX	QOX	QDPXS	IMOX	EXOX	STCOX	QDOX	QDLOX	QDSOX	QDWOX	QDPOX	QDOOX	QDXOX	QDFOX	POX
		Prod. code	Country code	% of process	Production	Processing supply	Imports	Exports	Stock change.	Total Supply	Feed demand	Seed demand	Loss	Processing demand	Other demand	Error	Food demand	Price
					t	t	t	t	t	t	t	t	t	t	t	t	t	USD/t
47	OX	SLV		32.107	7471	23270	230570	21939	-1500	217602	0	0	0	0	172092	1	45509	691.2
48	OX	XCA		0.000	27	0	4052	95	-435	4420	0	0	0	0	920	0	3500	356.0
49	OX	DOM		2191.165	103716	47323	226140	3387	-5067	331536	0	0	0	0	68224	0	263312	495.2
50	OX	IAM		21.146	22417	106013	36700	158	-2667	61625	0	0	0	0	21312	-7	40320	2420.4
51	OX	PRI		0.000	0	0	0	0	0	0	0	0	0	0	0	0	0	1013.5
52	OX	TTO		43.752	4704	10751	37715	3789	-799	39430	0	0	0	0	21529	0	17900	297.2
53	OX	XCB		232.585	37057	15933	318260	4495	7972	342850	0	0	0	0	103351	-2	239501	2293.1
54	OX	AUT		96.441	361963	375322	929311	271235	9997	1010043	1333	0	4100	3336	662184	0	339089	1289.4
55	OX	BEL		96.364	1465235	1520527	3155287	2426193	-31043	2225372	23333	0	0	119300	1668470	-73	414341	267.6
56	OX	CYP		44.495	4093	9198	43609	3002	2133	42566	94	0	0	0	17042	-1113	26543	2993.9
57	OX	CZE		81.310	652303	802243	401756	395496	22667	635896	0	0	0	0	231443	-2314	406766	443.6
58	OX	DNK		78.750	394288	500686	905023	640048	-17000	676263	0	0	0	-2	650136	-44720	70849	462.9
59	OX	EST		88.281	47495	53800	66990	64416	-4433	54502	0	0	0	0	38146	-114	16470	500.3
60	OX	FIN		83.478	227761	272838	166740	145847	13333	235321	1	0	0	-38	131297	1	104059	468.5
61	OX	FRA		1079.13	4606217	4268445	3259153	1971350	114933	5779087	0	0	0	0	3967797	-141181	1952471	625.2
62	OX	DEU		85.594	6827675	7976830	6747289	3588434	-75869	10062399	1449089	0	0	220644	6193589	-40103	2239180	344.5
63	OX	GRC		46.822	895419	1912385	382285	326861	21034	929810	0	0	0	0	426997	-4697	507510	1239.1
64	OX	HUN		3035.109	328328	10818	321585	236571	77980	335362	0	0	0	0	103748	-1283	232897	369.9
65	OX	IRL		65.053	21955	33749	391906	44267	3000	366594	0	0	0	1488	245438	0	119668	461.9
66	OX	ITA		56.995	1979593	3473285	5152539	1470880	72872	5588380	0	0	0	17775	2898195	-6579	2678989	242.3
67	OX	LVA		84.821	79506	93733	121913	32632	-1000	169787	6	0	0	0	132791	-32	37021	443.3
68	OX	LTU		79.622	46791	58767	182816	1526	-2333	176174	0	0	0	0	140665	-185	35695	333.0
69	OX	LUX		80.416	3015	3750	14785	17989	-1715	17989	70	0	0	0	6195	-1	11725	315.3
70	OX	MLT		52.083	17	32	11434	9	0	11442	0	0	0	0	5256	0	6186	753.6
71	OX	NLD		163.250	2148765	1316245	7837760	7820960	-223089	2388654	0	0	0	104533	1867164	-1	416958	384.5
72	OX	POL		78.797	1767207	2242735	1078440	661488	12000	2172158	0	0	0	12907	1350609	-7135	815777	326.5
73	OX	PRY		79.320	537900	678142	578514	277405	54037	784972	0	0	0	0	480719	-12324	316577	329.6
74	OX	SVK		109.413	161753	147836	257326	120083	35667	263329	0	0	0	5269	142229	1	115830	424.1
75	OX	SVN		169.744	8365	4928	100053	27365	3624	77429	2624	0	0	0	41867	0	32938	338.3
76	OX	ESP		61.027	4326784	7089943	2806020	2473207	396667	4262930	0	0	0	0	2425616	1	1837314	502.8
77	OX	SWE		83.585	263551	315309	1377724	544017	663	1096595	0	0	0	268	803908	20211	272208	481.8
78	OX	GBR		98.824	1838001	1859877	2431964	806664	-1525	3464826	0	0	3025	0	1621059	1	1840741	461.9
79	OX	CHE		124.071	101959	82178	289845	22292	-4080	373592	0	0	0	27527	103321	1	242743	652.2
80	OX	NOR		362.509	100182	27636	540166	106670	-1000	534678	0	0	0	26	425493	-29686	138846	796.1
81	OX	XEF		0.000	285	0	11045	120	0	11211	0	0	0	0	7847	-1	3364	652.2
82	OX	ALB		35.338	2742	7759	50172	861	67	51986	0	0	0	0	24256	5	24256	753.0
83	OX	BGR		4502.73	218520	48531	170034	174798	-4667	218423	0	0	0	0	119267	-22884	122041	614.9
84	OX	BLR		76.219	279010	366063	140824	108002	4333	307498	0	0	0	0	97097	-29	210430	281.6
85	OX	HRV		206.831	84659	40932	109313	42122	-5175	157026	0	0	0	0	83823	-567	73770	573.9
86	OX	ROU		266.444	461878	173349	278304	229039	15167	495976	0	0	0	0	186743	-2020	311254	359.7
87	OX	RUS		792.941	3259172	411023	1772152	981453	0	4039538	0	0	0	0	2159903	-23360	1902995	290.1
88	OX	UKR		3527.033	3145290	89177	525927	2698652	18987	953578	0	0	0	0	328074	-48448	673952	314.5
89	OX	XEE		4861.600	97232	2000	11593	65030	-14843	58638	0	0	0	0	8373	-2655	52919	272.2
90	OX	XER		534.263	289747	54233	210378	225630	-6550	281044	541	0	0	581	114397	-3185	168710	364.7
91	OX	KAZ		113.964	297780	261293	165413	52877	15067	395250	0	0	0	0	72602	-2000	324647	277.8
92	OX	KGZ		53.778	26076	48489	55280	217	0	81138	0	0	0	0	34046	-1	47093	243.5
93	OX	XSU		36.546	771017	2109693	303696	50123	6667	1017924	0	0	0	0	321357	0	696566	635.8

Table A-4-9. Launching pad data of soybean cake in 2010.

CNO	PID	CID	YCS	QCS	QDPSB	IMCS	EXCS	STCCS	QDSC	QDLS	QDSCS	QDWCS	QDPCS	QDOCS	QDXCS	QDFCS	PCS
Country No.	Prod. code	Country code	% of process	Production	Processing supply	Imports	Exports	Stock change	Total Supply	Feed demand	Seed demand	Loss	Processing demand	Other demand	Error	Food demand	Price
	t		%	t	t	t	t	t	t	t	t	t	t	t	t	t	USD t ⁻¹
1	CS	AUS	80.000	39124	48904	499233	206	0	538150	538150	0	0	0	0	0	0	472.7
2	CS	NZL	0.000	0	0	103327	280	0	103047	103047	0	0	0	0	0	0	472.7
3	CS	XOC	0.000	0	0	11106	0	0	11106	11106	0	0	0	0	0	0	708.1
4	CS	CHN	82.000	39542040	48222000	181609	848513	0	38875136	38875136	0	0	0	0	0	0	708.1
5	CS	HKG	0.000	0	0	11239	240	0	10999	10999	0	0	0	0	0	0	1580.5
6	CS	JPN	75.888	1777262	2341967	2101793	105	0	3878950	3878950	0	0	0	0	0	0	2664.2
7	CS	KOR	75.170	685800	912333	1664534	76725	0	2273608	2273608	0	0	0	0	0	0	708.1
8	CS	MING	0.000	0	0	38	0	0	38	38	0	0	0	0	0	0	708.1
9	CS	TWN	79.000	1774077	2245667	53746	5842	0	1821980	1821980	0	0	0	0	0	0	2664.2
10	CS	XEA	78.000	202482	259592	24051	0	0	226533	226533	0	0	0	0	0	0	733.2
11	CS	BRN	0.000	0	0	1436	0	0	1436	1436	0	0	0	0	0	0	627.9
12	CS	KHM	81.000	46710	57667	11778	0	0	58488	58488	0	0	0	0	0	0	733.2
13	CS	IDN	80.000	1730661	2163327	2710570	7	0	4441225	4441225	0	0	0	0	0	0	723.7
14	CS	LAO	80.001	5276	6595	0	0	0	5276	5276	0	0	0	0	0	0	733.2
15	CS	MYS	79.000	442627	560288	1023762	25073	0	1441317	1441317	0	0	0	0	0	0	467.6
16	CS	PHL	80.000	46549	58187	1431693	0	0	1478242	1478242	0	0	0	0	0	0	733.2
17	CS	SGP	0.000	0	0	0	0	0	0	0	0	0	0	0	0	0	459.0
18	CS	THA	77.993	1052667	1349700	2363615	174	0	3416107	3416107	0	0	0	2679136	0	0	747.1
19	CS	VNM	80.000	55717	69647	2629834	6416	0	2679136	2679136	0	0	0	0	0	0	499.8
20	CS	XSE	80.000	161171	201464	0	0	0	161171	161171	0	0	0	0	0	0	268.1
21	CS	BGD	0.000	0	0	380929	0	0	380929	380929	0	0	0	0	0	0	400.2
22	CS	IND	80.000	8303733	10379667	489	4290054	0	4014168	4014168	0	0	0	0	0	0	622.2
23	CS	NPL	78.000	40254	51608	63743	3094	0	100903	100903	0	0	0	0	0	0	565.4
24	CS	PAK	0.000	0	0	313517	5	0	313512	313512	0	0	0	0	0	0	392.9
25	CS	LKA	60.000	2341	3902	126302	2	0	128641	128641	0	0	0	0	0	0	408.7
26	CS	XSA	0.000	0	0	0	0	0	0	0	0	0	0	0	0	0	434.6
27	CS	CAN	79.137	1043167	1318183	1071744	93885	0	2021025	2021025	0	0	0	0	0	0	275.6
28	CS	USA	79.936	36592400	45777327	94489	7578145	0	29108743	29108743	0	0	0	0	0	0	320.7
29	CS	MEX	80.000	1776000	2220000	979757	6688	0	2749069	2749069	0	0	0	0	0	0	384.2
30	CS	XNA	0.000	0	0	0	0	0	0	0	0	0	0	0	0	0	408.7
31	CS	ARG	78.086	27192660	34823800	1932	24461480	0	2733112	2733112	0	0	0	0	0	0	275.6
32	CS	BOL	75.087	1195926	1592716	1	1027766	0	168162	168162	0	0	0	0	0	0	320.7
33	CS	BRA	77.721	26201667	33712327	35892	13425587	0	12811972	12811972	0	0	0	0	4	0	384.2
34	CS	CHL	79.999	50629	63287	506274	0	0	556903	556903	0	0	0	0	0	0	320.7
35	CS	COL	70.000	244930	349900	909983	27	0	1154886	1154886	0	0	0	0	0	0	555.0
36	CS	ECU	75.000	49863	66483	533337	75	0	583125	583125	0	0	0	0	0	0	497.6
37	CS	PER	79.000	1372657	1737540	33	1008689	0	364001	364001	0	0	0	0	0	0	359.9
38	CS	PER	80.000	3163	3953	938444	0	0	941606	941606	0	0	0	0	0	0	626.0
39	CS	URY	75.000	40201	53601	33700	12	0	73889	73889	0	0	0	0	0	0	420.1
40	CS	VEN	77.000	120065	155928	1014795	0	0	1134859	1134860	0	0	0	0	0	0	608.0
41	CS	XSM	0.000	0	0	26010	13	0	25996	25996	0	0	0	0	0	0	2143.4
42	CS	CRI	78.974	180167	228133	27379	1092	0	206454	206454	0	0	0	0	0	0	555.0
43	CS	GTM	75.000	27287	36383	276661	31	0	303918	303918	0	0	0	0	0	0	434.6
44	CS	HND	79.998	3013	3766	155314	189	0	158138	158138	0	0	0	0	0	0	321.2
45	CS	NIC	80.006	2574	3218	60525	267	0	62632	62632	0	0	0	0	0	0	321.2
46	CS	PAN	0.000	0	0	165145	0	0	165145	165145	0	0	0	0	0	0	555.0

Table A-4-10. Launching pad data of other cakes in 2010 (continued).

CNO	PID	CID	YCX	QCX	QDPXS	IMCX	EXCX	STCCX	ODCX	ODLCX	QDSCX	QDWCX	QDPXCX	QDOCX	QDXCX	QDFCX	PCX
Country No.	Prod. code	Country code	% of process	Production	Processing supply	Imports	Exports	Stock change	Total Supply	Feed demand	Seed demand	Loss	Processing demand	Other demand	Error	Food demand	Price
			t	t	t	t	t	t	t	t	t	t	t	t	t	t	USD t ⁻¹
47	CX	SLV	4812	1120	23270	10584	47	0	11657	11657	0	0	0	0	0	-1	0
48	CX	XCA	0.000	0	0	0	0	0	0	0	0	0	0	0	0	0	863.5
49	CX	DOM	19.673	9310	47323	700	0	0	10010	10010	0	0	0	0	0	0	625.3
50	CX	IAM	5.675	6016	106013	0	11	0	6005	6016	0	0	0	0	-11	0	2045.1
51	CX	PRI	0.000	0	0	0	0	0	0	0	0	0	0	0	0	0	625.3
52	CX	TTO	11.252	1210	10751	0	0	0	1210	1210	0	0	0	0	0	0	1202.8
53	CX	XCB	13.302	2119	15933	6161	0	0	8281	8281	0	0	0	0	0	0	482.84
54	CX	AUT	67.446	253140	375322	63881	95534	0	221487	221487	0	0	0	0	0	0	1563.9
55	CX	BEL	61.471	934688	1520527	558794	768521	-4333	729294	729294	0	0	0	0	0	0	267.6
56	CX	CYP	0.848	78	9198	33243	49	-10	33282	33282	0	0	0	0	0	0	351.52
57	CX	CZE	60.268	483499	802243	46086	248478	0	281108	287829	0	0	0	0	-6721	0	526.5
58	CX	DNK	46.202	231325	500686	538227	103283	168673	497596	531869	0	0	0	0	-34343	0	462.9
59	CX	EST	60.622	32615	53800	54670	20201	0	67084	67084	0	0	0	0	0	0	500.3
60	CX	FIN	62.670	170989	272838	150317	7400	0	313905	312832	0	0	0	0	0	0	468.5
61	CX	FRA	73.502	3137404	4268445	1133205	534939	-4932	3740602	3740603	0	0	0	0	0	0	501.9
62	CX	DEU	52.095	4155520	7976830	876407	1809389	35979	3164551	3164551	0	0	0	22008	0	0	468.2
63	CX	GRC	9.966	190595	1912385	36823	14454	0	212964	212964	0	0	0	0	0	0	971.8
64	CX	HUN	34.8692	377179	10818	72229	130980	-6500	324928	324928	0	0	0	0	0	0	430.1
65	CX	IRL	64.994	21935	33749	459166	36755	0	444346	444346	0	0	0	0	0	0	501.9
66	CX	ITA	14.573	506153	3473285	580283	33218	0	1053217	1053217	0	0	0	0	0	0	240.3
67	CX	LVA	61.067	57240	93733	50864	53974	-3333	57463	57461	0	0	0	0	2	0	443.3
68	CX	LTU	54.837	32226	58767	53469	111901	-12000	-14206	27978	0	0	0	0	-42184	0	448.4
69	CX	LUX	60.974	2286	3750	11383	417	0	13252	13252	0	0	0	0	0	0	413.3
70	CX	MLT	41.667	13	32	1777	0	0	1790	1790	0	0	0	0	0	0	240.3
71	CX	NLD	77.354	1018166	1316245	2698132	1226805	0	2489494	2489498	0	0	0	0	-4	0	416.0
72	CX	POL	57.382	1286935	2242735	654051	530830	0	1410156	1410156	0	0	0	0	0	0	463.8
73	CX	PRT	36.465	247284	678142	177961	45725	0	379519	379519	0	0	0	0	0	0	389.2
74	CX	SVK	91.134	134729	147836	25575	53973	123	106208	106233	0	0	0	0	-25	0	483.0
75	CX	SVN	68.283	3365	4928	87166	45129	0	45402	45419	0	0	0	0	-17	0	416.0
76	CX	ESP	8.621	611258	7089943	830413	150353	25200	1266118	1266118	0	0	0	0	0	0	539.5
77	CX	SWE	58.194	183491	315309	165400	43108	0	305783	305783	0	0	0	0	0	0	481.8
78	CX	GBR	57.516	1069724	1859877	1220986	155862	-13	2134861	2134861	0	0	0	0	0	0	461.9
79	CX	CHE	51.670	42462	82178	40058	1761	-7	80765	80765	0	0	0	0	0	0	819.0
80	CX	NOR	77.533	21427	27636	171483	880	-8	192038	190931	0	0	0	1107	0	0	796.1
81	CX	XEF	0.000	0	0	0	0	0	0	0	0	0	0	0	0	0	501.9
82	CX	ALB	20.934	1624	7759	5972	7	0	7589	7589	0	0	0	0	0	0	661.6
83	CX	BGR	46.9516	227859	48531	3368	103569	4083	123575	123689	0	0	0	0	-115	0	720.6
84	CX	BLR	60.154	220203	366063	467291	1247	0	686246	686246	0	0	0	0	0	0	305.1
85	CX	HRV	104.497	42772	40932	42123	17081	-5	67819	67819	0	0	0	0	0	0	412.8
86	CX	ROU	221.035	383162	173349	6053	277313	4000	107902	108195	0	0	0	0	-293	0	394.0
87	CX	RUS	649.486	2669537	411023	6438	970789	7983	1697203	1697203	0	0	0	0	0	0	353.0
88	CX	UKR	3311.392	2952989	89177	1085	2554625	166433	233016	233016	0	0	0	0	0	0	356.6
89	CX	XEE	503.2700	100654	2000	65	39270	0	61448	64006	0	0	0	0	-2538	0	329.6
90	CX	XER	400.0084	216978	54233	24023	85459	0	155541	156769	0	0	0	0	-1228	0	414.7
91	CX	KAZ	104.814	273872	261293	2320	122035	1407	152750	152750	0	0	0	0	0	0	334.1
92	CX	KGZ	61.945	30036	48489	5537	0	0	35573	35573	0	0	0	0	0	0	334.1
93	CX	XSU	46.020	970879	2109693	0	50000	0	920879	919334	0	0	0	0	1545	0	757.9

Table A-4-11. Launching pad data of beef in 2010.

CNO	PID	CID	YBF	QBF	HBFB	IMBF	EXBF	STCBF	QDBF	QDWBF	QDPBF	QDOBFB	QDXBF	QDFBF	PBF
Country No.	Prod. code	Country code	Yield kg head ⁻¹	Production t	Head	Imports t	Exports t	Stock change t	Total Supply t	Loss t	Processing demand t	Other demand t	Error t	Food demand t	Farm Price USD t ⁻¹
1	BF	AUS	256.616	2120828	8264600	9843	1256022	0	874649	0	0	0	0	0	1484.6
2	BF	NZL	160.759	631665	3929276	10183	503991	0	137857	0	0	0	0	0	1219.0
3	BF	XOC	145.090	16101	110975	17345	2245	0	31202	0	0	3375	1	27827	1042.1
4	BF	CHN	138.398	6455800	46646667	27253	67125	0	6415929	0	0	0	0	6415928	2410.9
5	BF	HKG	299.475	8500	28383	218395	59122	0	167772	0	0	8252	0	159520	3531.1
6	BF	JPN	408.000	510783	1251919	646562	3433	0	1153912	24333	0	0	0	1129578	12854.8
7	BF	KOR	327.886	270000	823457	371184	14503	0	626681	0	0	0	0	626681	6685.3
8	BF	MNG	118.689	53234	448521	103	4855	0	48482	0	0	0	0	48482	1324.4
9	BF	TWN	200.086	6204	31005	110784	638	0	116350	0	0	19	0	116330	2410.9
10	BF	XEA	153.329	22688	147969	7140	35	0	29792	0	0	30	0	29763	6685.3
11	BF	BRN	201.469	1006	4993	2959	3	0	3962	0	0	0	0	3962	1943.6
12	BF	KHM	124.196	73491	591733	151	0	0	73642	0	0	0	0	73642	1095.2
13	BF	IDN	225.468	479044	2124667	94579	1737	0	571886	0	0	0	11	571875	3528.8
14	BF	LAO	118.115	45317	383667	140924	10203	0	45317	0	0	0	0	45317	4209.8
15	BF	MYS	119.118	30693	257667	140924	10203	0	161414	0	0	0	0	161413	2375.7
16	BF	PHL	228.157	296323	1298767	120742	2254	5	414806	0	0	0	0	414806	1630.4
17	BF	SGP	0.000	0	120	0	0	0	0	0	0	0	0	0	2375.7
18	BF	THA	311.008	213574	686714	11234	41563	0	183245	0	-1	0	-10575	193821	1512.6
19	BF	VNM	182.037	379912	2087000	159007	614	0	538305	0	0	0	0	538305	1343.7
20	BF	XSE	149.121	223645	1499757	10188	0	0	233832	0	0	0	0	233832	916.7
21	BF	BGD	102.780	195640	1903489	141	0	0	195781	0	0	0	0	195781	873.0
22	BF	IND	121.677	2515677	20674965	181	791205	0	1724652	0	1	0	0	1724651	298.0
23	BF	NPL	173.300	212669	1227177	155	1515	0	211309	0	0	0	-105	211414	873.0
24	BF	PAK	148.037	1486000	10038000	2993	23096	0	1465896	0	0	0	0	1465896	1361.3
25	BF	LKA	133.870	29390	219541	112	68	0	29434	0	0	0	0	29434	431.0
26	BF	XSA	168.851	134667	797546	4953	0	0	139619	0	0	945	0	138675	3094.7
27	BF	CAN	337.969	1221723	3614900	247245	446394	0	1022574	0	0	0	0	1022574	1791.5
28	BF	USA	341.828	11952660	34966833	1142630	1115290	0	11980000	0	0	6667	-3769	11977103	2098.0
29	BF	MEX	205.323	1751218	8529075	263315	85676	0	1928837	0	0	0	-1	1928838	1387.5
30	BF	XNA	161.111	29	180	2693	0	-88	2811	103	0	344	0	2364	2098.0
31	BF	ARG	219.263	2835859	12933584	2465	400015	0	2438308	228939	0	0	0	2209369	1367.4
32	BF	BOL	167.821	203187	1210736	900	922	0	203164	0	0	0	0	203164	620.5
33	BF	BRA	229.558	9026667	39322000	34210	1538943	0	7521934	0	0	0	-5	7521939	3398.3
34	BF	CHL	253.616	203859	803807	160630	10242	0	354247	0	0	0	-2	354249	1396.5
35	BF	COL	211.247	799215	3783320	2319	39984	0	761550	15985	0	0	-19	745585	1523.1
36	BF	ECU	203.934	264400	1296500	932	248597	0	265332	0	0	0	0	265332	1612.6
37	BF	PRY	254.143	334333	1315535	1196	248597	0	86932	0	0	0	-1	86933	407.0
38	BF	PER	141.253	171250	1212361	4193	46	0	175397	53167	0	0	0	122230	1449.2
39	BF	URY	231.541	513012	2215640	582	412742	0	100852	0	0	0	0	100851	1396.3
40	BF	VEN	234.821	483620	2069525	166864	0	0	650485	25232	0	0	0	625253	2220.6
41	BF	XSM	158.475	4113	25954	3726	32	0	7807	0	0	0	-7	7814	3452.6
42	BF	CRI	231.329	96026	415104	5637	20720	0	80942	0	0	0	-60	81002	1002.8
43	BF	GTM	184.256	78800	427667	8863	6422	0	81241	0	0	0	-107	81348	1387.5
44	BF	HND	184.375	59807	324375	2557	3806	0	58558	0	0	0	0	58558	1978.1
45	BF	NIC	153.465	119077	775920	290	106615	-1623	20374	0	0	0	-266	20640	816.5
46	BF	PAN	217.000	80047	368879	3371	5833	50	77534	3997	0	0	0	73537	990.0

Table A-4-11. Launching pad data of beef in 2010 (continued).

CNO	PID	CID	YBF	QBF	HBF	IMBF	EXBF	STCBF	QDBF	QDLBF	QDSBF	QDWBF	QDPPBF	QDOBF	QDXBF	QDFBF	PBF
Country No.	Prod. code	Country code	Yield kg head ⁻¹	Production t	Head head	Imports t	Exports t	Stock change t	Total Supply t	Feed demand t	Seed demand t	Loss t	Processing demand t	Other demand t	Error t	Food demand t	Farm Price USD t ⁻¹
47	BF	SLV	165.455	29155	176213	23201	6	0	52351	0	0	0	0	0	0	52350	137.3
48	BF	XCA	204.080	1581	7745	304	0	-44	1929	0	0	0	0	0	0	1635	1202.8
49	BF	DOM	198.389	105583	532200	2490	7	0	108066	0	0	0	0	0	0	108066	1137.1
50	BF	IAM	260.430	5437	20877	8029	434	0	13032	0	0	58	0	0	0	12975	935.2
51	BF	PRI	0.000	0	44242	0	0	0	0	0	0	0	0	0	0	0	1979.3
52	BF	TTO	150.000	1100	7333	7643	1158	0	7585	0	0	0	0	0	0	7585	6219.6
53	BF	XCB	159.779	111867	700134	32187	130	44	143880	0	0	0	0	8042	-5	135842	4082.6
54	BF	AUT	322.940	225046	696868	42263	121477	0	145832	0	0	0	0	0	0	145832	2502.8
55	BF	BEL	328.603	271906	827460	86453	166594	0	191765	0	0	0	0	0	0	191765	3565.6
56	BF	CYP	277.569	4604	16586	3722	90	0	8235	0	0	387	0	0	-1	7216	2359.9
57	BF	CZE	288.935	74470	257739	35123	9792	-476	99801	0	0	1182	0	0	0	99801	1817.1
58	BF	DNK	261.890	131533	502247	139423	113169	0	158263	0	0	444	0	0	0	157081	2123.2
59	BF	EST	215.551	13016	60386	7256	2896	0	17376	0	0	0	0	0	0	16932	1664.4
60	BF	FIN	304.682	82863	271967	18419	1567	0	99715	0	0	0	0	0	0	99714	3680.7
61	BF	FRA	295.844	1537506	5197014	394674	301277	0	1630903	0	0	0	0	0	0	1630903	2842.2
62	BF	DEU	315.069	1188331	3771648	393943	511537	27	1070710	0	0	5000	0	0	0	1065710	2080.5
63	BF	GRC	213.133	74776	350842	148296	2739	0	220332	0	0	0	-26797	0	0	8151	3372.0
64	BF	HUN	256.289	28066	109508	19954	17607	-19608	500	0	0	500	0	0	0	56710	2032.2
65	BF	IRL	326.094	539078	1653133	61404	517849	0	102241	0	0	0	0	0	0	102240	2239.3
66	BF	ITA	377.2167	1047118	3772167	535943	207444	-241	1375858	0	0	0	0	0	0	1375858	3190.2
67	BF	LVA	174.850	18960	108438	3503	10253	0	12210	0	0	384	0	0	0	11826	1202.4
68	BF	LTU	224.903	43604	193878	3769	32848	0	14525	0	0	1545	0	0	-1	12980	1403.2
69	BF	LUX	355.084	9184	25864	8555	2714	-44	15069	0	0	0	0	0	0	15070	2735.8
70	BF	MLT	255.988	1364	5330	7618	41	0	8941	0	0	0	0	0	0	7924	1487.5
71	BF	NLD	189.816	390640	2058000	429483	531668	0	288455	0	0	0	0	0	0	288455	2754.0
72	BF	POL	242.771	396333	1632537	16107	291928	-1900	122413	0	0	0	0	3488	0	118925	1614.3
73	BF	PRY	231.277	97386	421079	97219	5870	0	188736	0	0	0	0	4328	0	184408	3613.7
74	BF	SVK	251.132	15487	61667	14935	3868	0	26554	0	0	0	0	0	0	26554	1990.1
75	BF	SVN	284.602	35534	124856	10881	5250	0	41165	0	0	0	0	0	0	41165	2194.9
76	BF	ESP	261.307	603047	2307808	163573	137157	0	629462	0	0	0	0	0	0	629462	1362.6
77	BF	SWE	313.341	134060	427840	108175	19433	0	222803	0	0	0	0	0	0	222802	1083.9
78	BF	GBR	332.093	892333	2687000	457660	151620	0	1198374	0	0	0	0	0	0	1198374	2331.9
79	BF	CHE	219.064	142788	651810	28284	4032	0	167040	0	0	0	0	0	0	167040	4401.6
80	BF	NOR	270.203	83311	308328	10306	236	0	93380	0	0	0	0	0	1	93380	1869.2
81	BF	XEF	183.420	3838	20925	298	306	0	3830	0	0	0	0	0	1	3829	2212.4
82	BF	ALB	170.232	62333	366167	3144	0	0	65478	0	0	0	0	0	0	65478	3563.9
83	BF	BGR	144.226	20947	145235	16052	1565	0	35434	0	0	0	0	0	0	35434	1581.3
84	BF	BLR	172.090	304600	1770000	1777	117389	0	188989	0	0	1209	0	0	0	18780	1517.9
85	BF	HRV	144.861	36833	254267	10822	6258	0	41397	0	0	0	0	-1	0	41398	2505.3
86	BF	ROU	163.097	150656	923722	18814	3932	2187	16351	0	0	7735	0	0	0	155617	1634.8
87	BF	RUS	186.700	1697803	9093739	745010	6675	0	2436138	0	0	5137	0	0	0	2431001	1922.4
88	BF	UKR	151.666	426767	2813867	6009	15232	0	417543	0	0	1708	0	994	0	414842	1274.2
89	BF	XEE	130.076	10293	79133	590	1776	0	9108	0	0	0	0	0	0	9108	1395.6
90	BF	XER	197.869	126365	638629	28056	4342	0	150079	0	0	0	0	0	0	150080	2159.2
91	BF	KAZ	156.593	398571	2545275	14566	412	5333	407392	7667	0	16667	0	27098	0	355961	1943.0
92	BF	KGZ	176.328	96981	550000	2532	17	0	99496	0	0	0	0	21433	0	78062	2194.0
93	BF	XSU	179.842	851654	4735567	2622	0	0	854276	0	0	6301	0	0	0	847975	1469.6

Table A-4-12. Launching pad data of mutton and lamb in 2010.

CNO	Country No.	PID	Country code	YSH	QSH	HSH	HSH	IMSH	EXSH	STCSH	QDSH	QDLSH	QDSSH	QDWSH	QDPSH	QDOSH	QDXSH	QDFSH	PSH
		Prod. code		Yield kg. head ⁻¹	Production t	Head	Head	Imports t	Exports t	Stock change. t	Total Supply t	Feed demand t	Seed demand t	Loss t	Processing demand t	Other demand t	Error t	Food demand t	Farm Price USD t ⁻¹
1	SH	AUS	27504833	21616	59458	27504833	27504833	1120	296514	0	299165	0	0	0	0	71206	0	227959	15045
2	SH	NZL	18498	18498	472767	25557390	25557390	2933	339319	0	136382	0	0	0	0	45970	0	90412	15900
3	SH	XOC	26428	26428	973	36817	36817	8336	44	0	9465	0	0	0	81	0	0	9384	14525
4	SH	CHN	14509	14509	3919500	270138336	270138336	68859	10377	0	3977982	0	0	0	0	0	0	3977982	24964
5	SH	HKG	12493	12493	156	12514	12514	20487	4146	0	16498	0	0	0	0	1667	0	14831	24964
6	SH	JPN	24638	194	194	7860	20930	20930	0	0	21124	0	0	422	0	0	0	20702	41082
7	SH	KOR	14992	14992	1495	99697	99697	4333	0	0	5828	0	0	0	0	0	0	5828	41082
8	SH	MNG	16269	16269	139842	8595553	8595553	2	442	0	139401	0	0	0	0	3333	0	136068	11378
9	SH	TWN	25693	25693	2711	105502	105502	21104	3	0	23812	0	0	0	0	0	0	23812	24964
10	SH	XEA	14984	14984	15735	1050114	1050114	494	0	0	16229	0	0	0	0	0	0	16229	41082
11	SH	BRN	12090	12090	63	5183	5183	716	0	0	779	0	0	0	0	0	0	779	29108
12	SH	KHM	0	0	0	0	0	30	0	0	30	0	0	0	0	0	0	30	24964
13	SH	IDN	10002	10002	118307	11828667	11828667	875	2	0	119180	0	0	0	0	0	0	119180	38279
14	SH	LAO	14000	14000	1493	106667	106667	0	0	0	1493	0	0	0	0	0	0	1493	31433
15	SH	MYS	10191	10191	1921	188533	188533	19582	60	0	21443	0	0	0	0	0	0	21443	48871
16	SH	PHL	17485	17485	55275	3161249	3161249	501	0	0	55776	0	0	0	0	0	0	55776	20613
17	SH	SGP	0	0	0	1927	1927	0	0	0	0	0	0	0	0	0	0	0	48871
18	SH	THA	14872	14872	1602	107742	107742	803	0	0	2406	0	0	0	0	0	0	2406	24964
19	SH	VNM	15000	15000	8330	555333	555333	5929	0	0	14259	0	0	0	0	0	0	14259	24964
20	SH	XSE	11645	11645	42709	3667600	3667600	6	0	0	42716	0	0	0	0	0	0	42716	1050
21	SH	BGD	8033	8033	195053	24281091	24281091	12	0	0	195065	0	0	0	0	0	0	195065	11659
22	SH	IND	10574	10574	773413	73140000	73140000	24	25770	0	747668	0	0	0	0	0	0	747668	10679
23	SH	NPL	10847	10847	53085	4894133	4894133	14	11	0	53089	0	0	0	0	0	0	53089	24961
24	SH	PAK	16169	16169	434333	26862667	26862667	82	11696	0	422719	0	0	0	0	0	0	422719	18724
25	SH	LKA	20007	20007	1434	71657	71657	306	2	0	1738	0	0	0	0	0	0	1738	7682
26	SH	XSA	14958	14958	151693	10141287	10141287	235	0	0	151928	0	0	0	0	0	0	151928	26571
27	SH	CAN	22858	22858	16515	722500	722500	21380	342	0	37553	1868	0	0	0	0	0	35685	14919
28	SH	USA	30486	30486	75418	2473833	2473833	81253	8786	0	147884	13294	0	0	0	0	0	134590	8724
29	SH	MEX	18505	18505	98733	5335589	5335589	15382	74	0	114041	0	0	0	0	0	0	114041	17148
30	SH	XNA	0	0	2	18756	18756	768	0	0	770	0	0	0	0	321	0	448	8724
31	SH	ARG	16129	16129	84200	5220316	5220316	37	7241	0	76995	0	0	0	0	0	0	76995	18949
32	SH	BOL	11029	11029	17832	1616734	1616734	0	0	0	17832	0	0	0	0	0	0	17832	4071
33	SH	BRA	14523	14523	110967	7640667	7640667	6155	26	0	117096	0	0	0	0	0	0	117096	9253
34	SH	CHL	15068	15068	16557	1098781	1098781	0	6367	0	10189	0	0	0	0	0	0	10189	10309
35	SH	COL	15163	15163	10988	724667	724667	28	94	0	10922	0	0	0	0	0	0	10922	13789
36	SH	ECU	15937	15937	8159	511970	511970	19	0	0	8178	0	0	0	0	0	0	8178	32955
37	SH	PRY	13212	13212	3565	269833	269833	0	0	0	3565	0	0	0	0	0	0	3565	9253
38	SH	PER	12189	12189	40278	3304351	3304351	5	2	0	40281	0	0	0	0	0	0	25115	13789
39	SH	URY	28359	28359	59333	2092242	2092242	0	17577	0	41757	0	0	15167	0	0	0	41757	15933
40	SH	VEN	11567	11567	10561	913005	913005	0	19	0	10542	0	0	0	0	0	0	10542	31292
41	SH	XSM	6723	6723	849	126279	126279	13	0	0	862	0	0	0	0	0	0	862	68185
42	SH	CRI	13147	13147	33	2510	2510	41	0	0	74	0	0	0	0	0	0	73	17148
43	SH	GTM	14999	14999	3302	220167	220167	55	0	0	3358	0	0	0	0	0	0	3358	17148
44	SH	HND	15010	15010	244	16233	16233	12	0	0	256	0	0	0	0	0	0	256	17148
45	SH	NIC	14183	14183	59	4183	4183	4	0	0	63	0	0	0	0	0	0	63	17148
46	SH	PAN	0	0	0	0	0	40	0	0	40	0	0	0	0	0	0	40	17148

Table A-4-12. Launching pad data of mutton and lamb in 2010 (continued).

CNO	Country No.	PID	Prod. code	CID	Country code	YSH	Yield kg head ⁻¹	QSH	Production t	HSH	Head head	IMSH	Imports t	EXSH	Exports t	STCSH	Stock change t	QDSSH	Total Supply t	QDLSH	Feed demand t	QDSSH	Seed demand t	QDWSH	Loss t	QDPSH	Processing demand t	QDOSH	Other demand t	QDXSH	Error t	QDFSH	Food demand t	PSH	Farm Price USD t ⁻¹
47	SH	SLV				15000		122	8133			9							131													131		17148	
48	SH	XCA				19680		23	1186			2							25														25		17148
49	SH	DOM				12009		1648	137233			391							2039													2039		7680	
50	SH	IAM				22596		1057	46777			3517							4574													4574		22696	
51	SH	PRI				0		0	0			0							0													0		55682	
52	SH	TTO				19176		303	15818			3156		4					3456												3456		45368		
53	SH	XCB				14498		20625	1422636			3950							24575									412			24163		73487		
54	SH	AUT				21523		7058	327937			2410							9383												9383		25677		
55	SH	BEL				18346		1966	107146			32349							15399												15399		41810		
56	SH	CYP				19500		5085	260752			1725							6810												6810		37993		
57	SH	CZE				14899		2238	150235			373							2572												2572		30436		
58	SH	DNK				20319		1729	85095			4997							5579												5579		20530		
59	SH	EST				18796		688	36603			108							739												739		21811		
60	SH	FIN				18997		833	43867			2035							2717												2717		30552		
61	SH	FRA				17069		131742	7718368			117643							239464									29251			210213		35481		
62	SH	DEU				20521		39430	1921430			36166							67638												67638		28487		
63	SH	GRC				10742		144103	13415333			9514							151900												1188		20690		
64	SH	HUN				17422		1100	63120			140							1188												1188		31510		
65	SH	IRL				20062		50309	2507667			3444							15604												15604		23888		
66	SH	ITA				9914		54228	5469980			26292							78426												3076		38781		
67	SH	LVA				21007		617	29386			58							662												662		17043		
68	SH	LTU				14881		646	43387			66							699												699		23335		
69	SH	LUX				18443		50	2693			930							925												925		47773		
70	SH	MLT				14417		136	9433			615							751												143		15051		
71	SH	NLD				20527		14835	722707			17897							15791												15791		29105		
72	SH	POL				13197		1133	85880			831							1912												82		22964		
73	SH	PRT				10255		19628	1914000			6847							25919												25919		18802		
74	SH	SVK				10014		1301	129957			33							927												927		6894		
75	SH	SVN				13792		1977	143367			50							2012												2012		27322		
76	SH	ESP				10875		138946	12776443			13493							127925												127925		8024		
77	SH	SWE				19612		5042	257091			7608							12510												12510		14300		
78	SH	GBR				20433		300200	14692000			102331							308481												308481		23659		
79	SH	CHE				21845		5892	269734			6073							11950												11950		44948		
80	SH	NOR				20050		24203	1207119			1358							25552												25552		16434		
81	SH	XEF				16427		9198	559920			0							6310												6310		29666		
82	SH	ALB				16043		37233	2320833			419							37653												37653		35101		
83	SH	BGR				10553		16779	1590006			340							13377												13377		28847		
84	SH	BLR				20000		1333	66667			1							1334												1334		24908		
85	SH	HRV				12419		2355	189633			1604							3959												3959		37732		
86	SH	ROU				10156		70069	6899567			516							67830												66562		19200		
87	SH	RUS				18352		185434	10104154			9473							194898												194898		15149		
88	SH	UKR				16830		19500	1158633			3							19502												19502		12938		
89	SH	XEE				15988		2137	133667			24							1041												1041		1947		
90	SH	XER				16010		32120	2006206			412							29596												29596		29811		
91	SH	KAZ				17489		142438	8145822			88							142310												142310		17973		
92	SH	KGZ				19800		49772	2513700			11							49405												1272		48134		
93	SH	XSU				17541		281461	16045667			4							281465												6467		274998		

Table A-4-12. Launching pad data of mutton and lamb in 2010 (continued).

CNO	Country No.	PID	Prod. code	CID	Country code	YSH	Yield kg head ⁻¹	QSH	Production t	HSH	Head head	IMSH	Imports t	EXSH	Exports t	STCSH	Stock change t	QDSSH	Seed demand t	QDWSH	Loss t	QDPSH	Processing demand t	QDOSH	Other demand t	QDXSH	Error t	QDFSH	Food demand t	PSH	Farm Price USD t ⁻¹
94	SH	ARM				16009		8400		524694			4					8400										8400		35199	
95	SH	AZE				14600		71817		4919033		369						72186											72186		2273.1
96	SH	GEO				17887		4343		242818		1						4344											4344		1800.8
97	SH	BHR				0000		0		896500		0						0										0		2885.1	
98	SH	IRN				15483		242242		15645368		6317						248558										0		5558.1	
99	SH	ISR				19105		12494		633957		1498						13992										0		6128.7	
100	SH	KWT				16660		36314		2179667		11050						47280										0		5341.8	
101	SH	JOR				12300		21399		1739733		20923						36490										0		5341.8	
102	SH	OMN				27613		34838		1261667		9463						44154			972							0		5341.8	
103	SH	QAT				0000		0		748333		0						0										0		2885.1	
104	SH	SAU				18450		101900		5523000		54453						152826										0		5341.8	
105	SH	TUR				15917		289167		18166667		4						289162										0		7084.6	
106	SH	ARE				15869		45358		2888333		36293						80629			5799							0		5341.8	
107	SH	XWS				8326		139632		16771086		6390						146019										0		7186.2	
108	SH	EGY				26688		133123		4988061		2459						135406										0		3770.2	
109	SH	MAR				13734		161564		11764000		53						161604										0		2945.4	
110	SH	TUN				12799		59517		4650000		1011						60519										0		2954.9	
111	SH	XNF				13428		234407		17471767		18						234625										0		4635.0	
112	SH	BEN				10000		8165		816513		14						8180										0		676.9	
113	SH	BFA				8667		51692		5964235		1						51690										0		1020.9	
114	SH	CMR				9732		33400		3431969		6						33407										0		1165.7	
115	SH	CIV				12361		11990		970000		978						12963										0		1891.7	
116	SH	GHA				13990		36226		2589429		5893						42119										0		404.1	
117	SH	GIN				12344		15434		1250333		7						15441										0		2383.5	
118	SH	NGA				12027		451643		37553727		32						451676										0		676.9	
119	SH	SEN				11059		34528		3122326		122						34636										0		1406.6	
120	SH	TGO				9941		10852		1091648		9						10861										0		1003.8	
121	SH	XWF				12571		244039		19412972		147						244186										0		3569.0	
122	SH	XCF				14713		64252		4367103		1146						65398										0		5734.8	
123	SH	XAC				6416		20960		3266760		1585						22545										0		1648.5	
124	SH	ETH				9282		151917		16366667		5						141733										0		1509.2	
125	SH	KEN				12867		87513		6801361		814						86699										0		822.7	
126	SH	MDG				14147		12699		897667		1						12700										0		1621.9	
127	SH	MWI				9284		25302		2725403		2						25304										0		2900.4	
128	SH	MUS				17251		172		9990		5020						5188										0		2900.4	
129	SH	MOZ				20000		20312		1692667		0						20312										0		2900.4	
130	SH	RWA				20544		16644		810152		0						16644										0		1313.5	
131	SH	TZA				12000		48452		4037667		168						48550										0		1509.2	
132	SH	UGA				12090		42693		3531333		70						42693										0		1313.5	
133	SH	ZMB				12155		9232		759500		7						9231										0		1313.5	
134	SH	ZWE				7461		13400		1796000		4						13403										0		1532.7	
135	SH	XEC				9410		477701		50764993		114						474378										0		4005.0	
136	SH	BWA				12435		7442		598500		261						7703										0		2900.4	
137	SH	NAM				17511		18506		1056833		330						13790										0		756.3	
138	SH	ZAF				21890		175070		7997667		9378						184065										0		2900.4	
139	SH	XSC				10880		9186		844333		0						9186										0		2900.4	
140	SH	XTW				0000		0		0		0						0										0		768.2	

Table A-4-13. Launching pad data of pork in 2010.

CNO	PID	CID	YPK	QPK	HPK	IMPK	EXPK	STCPK	QDPK	QDLPK	QDSPK	QDWPK	QDPPK	QDOPK	QDXPK	QDFPK	PKK
Country No.	Prod code	Country code	Yield kg head ⁻¹	Production t	Head	Imports t	Exports t	Stock change	Total Supply	Feed demand	Seed demand	Loss	Processing demand	Other demand	Error	Food demand	FiamPrice USD t ⁻¹
1	PK	AUS	72.880	333268	4572833	203974	36888	0	500354	0	0	0	0	0	0	500354	1729.4
2	PK	NZL	68.200	47977	703478	44347	572	0	91752	0	0	0	0	0	0	91752	1956.5
3	PK	XOC	7.541	17671	2343439	10970	135	0	28507	0	0	0	0	5534	-1	22973	3509.7
4	PK	CHN	74.010	47980467	648294997	377592	285968	0	48072091	0	0	0	13450	0	0	48058640	1981.4
5	PK	HKG	75.029	123900	1651353	602785	187748	0	538937	0	0	0	0	117055	0	421882	2312.6
6	PK	JPN	77.135	1289896	16722648	1326028	832	0	2615093	0	0	48333	0	0	0	2566760	3448.7
7	PK	KOR	76.437	1003000	13122000	492256	3520	0	1491736	0	0	0	0	0	-1	1491736	2339.9
8	PK	MNG	30.056	357	11867	62	0	0	419	0	0	0	0	0	1	418	1557.0
9	PK	TWN	98.339	855804	8702650	57353	3301	0	909856	0	0	0	0	2070	0	907786	1981.4
10	PK	XEA	51.246	117352	2289994	26511	31	0	143832	0	0	0	0	2130	0	141702	3448.7
11	PK	BRN	34.783	48	1380	2612	0	0	2660	0	0	0	0	0	0	2660	2288.7
12	PK	KHM	50.000	110000	2200000	48	0	-7333	117382	0	0	0	0	0	0	117382	2415.0
13	PK	IDN	55.000	688343	12515333	1071	523	0	688891	0	0	0	0	0	0	688890	2198.1
14	PK	LAO	29.490	56600	1919309	0	0	0	56600	0	0	0	0	0	0	56600	2898.0
15	PK	MYS	54.800	223677	4081667	18707	6733	0	235650	0	0	0	0	52	-696	236295	2288.7
16	PK	PHL	67.464	1635394	24240986	78679	2592	0	1711480	0	0	0	0	0	0	1711481	1954.0
17	PK	SGP	0.000	0	286963	0	0	0	0	0	0	0	0	0	0	0	3135.7
18	PK	THA	71.332	850184	1918610	389	14590	0	835983	0	0	0	0	0	0	835983	1900.9
19	PK	VNM	69.971	3057037	43690000	3140	9277	0	3050900	0	0	0	0	0	-1	3050901	1188.6
20	PK	XSE	75.836	589527	7773667	881	0	0	590408	0	0	17392	0	0	0	573017	276.7
21	PK	BGD	0.000	0	0	0	0	0	0	0	0	0	0	0	0	0	513.1
22	PK	IND	35.000	371000	10600000	2026	1595	0	371431	0	0	0	0	0	0	371431	513.1
23	PK	NPL	31.793	17327	545000	54	674	0	16707	0	0	0	0	0	-654	17361	1436.1
24	PK	PAK	0.000	0	0	15	47	0	-32	0	0	0	0	0	0	-32	513.1
25	PK	LKA	70.928	1590	22417	16	1863	0	-257	0	0	0	0	0	-458	201	513.1
26	PK	XSA	0.000	0	26203	407	0	0	407	0	0	0	0	0	0	407	1797.4
27	PK	CAN	91.100	1954567	21455067	221842	1170795	0	1005614	0	0	156187	0	0	0	849427	1186.1
28	PK	USA	92.397	10319420	111685701	459513	2089768	13000	8676165	0	0	0	0	1667	-51510	8726008	1183.3
29	PK	MEX	74.986	1179659	15731654	591129	92344	0	1678444	0	0	13	0	0	0	1678444	1438.9
30	PK	XNA	71.667	72	1000	1464	0	0	1536	0	0	0	0	235	0	1288	1183.3
31	PK	ARG	86.712	289539	3339090	54357	1359	0	342537	0	0	0	0	0	0	342536	1144.3
32	PK	BOL	55.957	83549	1493089	708	0	0	84257	0	0	0	0	0	0	84257	551.2
33	PK	BRA	93.043	3184000	34220667	927	803883	0	2381044	0	0	0	0	0	0	2381044	1579.7
34	PK	CHL	99.494	513362	5159717	14008	147380	0	379990	0	0	0	0	0	0	379991	1127.2
35	PK	COL	79.014	194701	2464142	16279	13	0	210967	0	0	0	0	0	0	210967	2537.7
36	PK	ECU	92.360	189000	2046333	7523	21	0	196502	0	0	0	0	0	0	196502	1982.3
37	PK	PRY	80.000	156000	1950000	2301	341	0	157959	0	0	0	0	0	0	157959	407.4
38	PK	PER	53.163	115939	2180836	4286	7	0	120218	0	23000	0	0	0	0	97219	1568.6
39	PK	URY	67.316	16802	249600	21946	53	0	38695	0	0	0	0	0	0	38695	1287.1
40	PK	VEN	66.893	195487	2922387	42074	2	0	237559	0	0	1940	0	0	0	235619	3719.9
41	PK	XSM	56.966	2228	39117	128	128	0	5958	0	0	0	0	0	0	5958	2850.2
42	PK	CRI	75.497	49307	653094	4137	7365	0	46079	0	0	0	0	0	-236	46315	915.6
43	PK	GTM	49.950	58733	1175833	27950	12714	0	73969	0	0	0	0	0	0	73970	1438.9
44	PK	HND	65.181	12029	184552	31576	26	0	43579	0	0	0	0	0	0	43579	1736.1
45	PK	NIC	55.051	7571	137528	8793	174	0	16190	0	0	0	0	0	0	16190	1651.9
46	PK	PAN	74.000	31035	419388	12254	10	0	43279	0	0	1320	0	0	1	41958	860.9

Table A-4-13. Launching pad data of pork in 2010 (continued).

CNO	Country No.	PID	Prod code	CID	Country code	YPK	Yield kg head ⁻¹	QPK	Production t	HPK	Head head	IMPK	Imports t	EXPK	Exports t	STCPK	Stock change t	QIDPK	Total Supply t	QDLPK	Feed demand t	QDSPK	Seed demand t	QDWPK	Loss t	QDPPK	Processing demand t	QDOPK	Other demand t	QDXPK	Error t	QDFPK	Food demand t	PPK	Farm Price USD t ⁻¹
47	PK	PK		SLV		44733	8343		186506		12992	3952	0	0	17383	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17383	2218.0
48	PK	PK		XCA		59650	1199	20095	3285		3285		4546		4546		-63																	4546	1196.2
49	PK	PK		DOM		1308733	92928		15915	18	18		108825		108825		0																	108825	1180.8
50	PK	PK		IAM		70817	8014		2800		2800		10611		10611		0																10611	1077.1	
51	PK	PK		PRI		0	0		0		0		0		0		0																0	2641.1	
52	PK	PK		TTO		52962	3368	63593	7869		563		10674		10674		0																10675	6043.3	
53	PK	PK		XCB		215148	3928607		85621	417	578		299774		299774		0					11980	0	0	0	0	0	0	0	0	0	0	287793	4899.2	
54	PK	PK		AUT		543428	5610344		202418		292395		453451		453451		0					0	0	0	0	0	0	0	0	0	0	0	453451	1594.1	
55	PK	PK		BEL		1104687	11608747		176970		900192		381465		381465		0					0	0	0	0	0	0	0	0	0	0	0	381465	1429.6	
56	PK	PK		CYP		56791	722299		5857		6562		56086		56086		0					0	0	0	0	2866	0	0	0	0	0	0	0	56086	1449.4
57	PK	PK		CZE		88459	288741		3264112		276736		85878		85878		0					0	0	0	0	0	0	0	0	0	0	0	0	479599	1473.1
58	PK	PK		DNK		82385	1657800		20122600		141180		111751		111751		474					0	0	0	0	0	0	0	0	0	0	0	111752	1222.4	
59	PK	PK		EST		76435	47376		619818		35709		58545		58545		0					0	0	0	0	10914	0	0	0	0	0	0	47631	1565.8	
60	PK	PK		FIN		89008	205633		2287800		33906		187979		187979		0					0	0	0	0	0	0	0	0	0	0	0	187980	2980.3	
61	PK	PK		FRA		88071	2244549		25485769		588535		666171		666171		0					0	0	0	0	0	0	0	0	0	0	0	2166913	1119.5	
62	PK	PK		DEU		93710	5456316		58225516		1256771		2256160		2256160		0					0	0	0	0	0	0	0	0	0	0	0	4456928	1525.3	
63	PK	PK		GRC		54096	99900		1846701		255174		8493		8493		0					0	0	0	0	0	0	0	0	0	0	0	346581	2832.7	
64	PK	PK		HUN		92597	446755		4824697		174756		198126		198126		2963					0	0	0	0	1222	0	0	0	0	0	0	423384	1544.1	
65	PK	PK		IRL		80944	215395		2661033		92954		165556		165556		0					0	0	0	0	0	0	0	0	0	0	0	139831	1035.8	
66	PK	PK		ITA		121192	1634302		13485205		1074571		255624		255624		0					0	0	0	0	0	0	0	0	0	0	0	2453248	2500.4	
67	PK	PK		LVA		76393	37861		495611		53797		9369		9369		0					0	0	0	0	600	0	0	0	0	0	0	81690	1572.7	
68	PK	PK		LTU		81669	69563		851761		88128		13745		13745		0					0	0	0	0	2156	0	0	0	0	0	0	141470	1530.5	
69	PK	PK		LUX		70890	9907		139756		17157		4683		4683		0					0	0	0	0	0	0	0	0	0	0	0	22381	2024.2	
70	PK	PK		MLT		85660	7395		86330		8278		13		13		0					0	0	0	0	0	0	0	0	0	0	0	15661	1590.3	
71	PK	PK		NLD		92465	1305382		14117653		345517		1076761		1076761		0					0	0	0	0	0	0	0	0	0	0	0	574138	1389.9	
72	PK	PK		POL		87839	1855600		21124937		570292		393720		393720		0					0	0	0	0	0	0	0	0	0	0	0	1912411	1425.7	
73	PK	PK		PRT		64253	380689		5924803		146909		64849		64849		0					0	0	0	0	0	0	0	0	0	0	0	446217	1303.3	
74	PK	PK		SVK		93595	85539		913924		142165		30577		30577		0					0	0	0	0	0	0	0	0	0	0	0	197127	993.2	
75	PK	PK		SVN		93237	42398		454737		55403		18547		18547		0					0	0	0	0	0	0	0	0	0	0	0	79255	1549.4	
76	PK	PK		ESP		82029	3376279		41159429		127841		1248752		1248752		6667					0	0	0	0	0	0	0	0	0	0	0	2248701	1245.8	
77	PK	PK		SWE		89300	260102		2912688		127288		38064		38064		0					0	0	0	0	0	0	0	0	0	0	0	349327	1234.8	
78	PK	PK		GBR		80018	761418		9515614		1076698		205805		205805		0					0	0	0	0	0	0	0	0	0	0	0	1632311	1649.7	
79	PK	PK		CHE		87822	245419		2794505		18180		1151		1151		0					0	0	0	0	0	0	0	0	0	0	0	262448	2622.4	
80	PK	PK		NOR		82216	127721		1553485		4631		4247		4247		0					0	0	0	0	0	0	0	0	0	0	0	14105	1655.9	
81	PK	PK		XEF		77635	6192		79762		281		82		82		0					0	0	0	0	0	0	0	0	0	0	0	6391	2881.7	
82	PK	PK		ALB		88947	16900		190000		18361		11		11		0					0	0	0	0	0	0	0	0	0	0	0	35250	2888.0	
83	PK	PK		BGR		73419	72212		983566		131409		7404		7404		0					0	0	0	0	0	0	0	0	0	0	0	196216	1636.1	
84	PK	PK		BLR		75000	401967		5359567		69389		98126		98126		0					0	0	0	0	1524	0	0	0	0	0	0	371705	1630.8	
85	PK	PK		HRV		76058	124033		1630767		72953		10027		10027		0					0	0	0	0	0	0	0	0	0	0	0	186959	1793.2	
86	PK	PK		ROU		82064	451291		5499242		250364		17543		17543		0					0	0	0	0	0	0	0	0	0	0	0	666905	1644.3	
87	PK	PK		RUS		83402	2309306		27688739		817044		45301		45301		0					0	0	0	0	0	0	0	0	0	0	0	3076193	2359.6	
88	PK	PK		UKR		88514	620700		7012467		127460		5923		5923		466					0	0	0	0	0	0	0	0	0	0	0	741771	1705.5	
89	PK	PK		XEE		83001	54349		654800		5168		55		55		0					0	0	0	0	0	0	0	0	0	0	0	59462	2118.4	
90	PK	PK		XER		48588	288362		5934837		84181		21504		21504		962					0	0	0	0	0	0	0	0	0	0	0	337235	1839.8	
91	PK	PK		KAZ		65249	209489		3210600		45328		107		107		0					0	0	0	0	0	0	0	0	0	0	0	254710	2015.5	
92	PK	PK		KGZ		67824	16617		245000		12673		57		57		0					0	0	0	0	969	0	0	0	0	0	0	28268	2472.6	
93	PK	PK		XSU		64478	24687		382867		10607		0		0		0					0	0	0	0	15	0	0	0	0	0	0	35279	2015.5	

Table A-4-14. Launching pad data of poultry meat in 2010.

CNO	PID	CID	YPM	QPM	HPM	IMPM	EXPM	STICPM	QDPM	QDLPM	QDSPM	QDWPM	QDPPM	QDOFPM	QDXPM	QDFPM	PPM
Country No.	Prod. code	Country code	Yield kg head ¹	Production t	Head 000head	Imports t	Exports t	Stock change t	Total Supply t	Feed demand t	Seed demand t	Loss t	Processing demand t	Other demand t	Error t	Food demand t	Farm Price USD t ¹
1	PM	AUS	1.835	949362	517250	7201	32738	0	923825	0	0	0	0	0	0	0	1294.9
2	PM	NZL	1.764	147489	83614	703	5755	0	142437	0	0	0	0	0	0	0	1296.7
3	PM	XOC	0.867	19878	22929	39381	179	0	59080	0	0	0	0	3817	0	0	6729.0
4	PM	CHN	1.506	16532667	10980790	5711118	476545	0	16627240	0	0	0	1500	0	-3	16625742	2309.6
5	PM	HKG	1.562	32478	20793	1163476	689593	26667	479695	0	0	0	0	42458	0	0	2855.8
6	PM	JPN	1.926	1402804	728259	945384	8184	0	2340004	0	0	362.11	0	0	0	2303793	2223.1
7	PM	KOR	0.862	650353	754345	106779	20123	0	737009	0	0	0	0	0	0	737009	1516.0
8	PM	MNG	1.400	336	240	3846	0	0	4182	0	0	0	0	0	0	4182	2309.6
9	PM	TWN	1.756	650924	370620	165880	5980	0	810824	0	0	0	0	147	1	810676	2309.6
10	PM	XEA	1.188	46300	38988	15417	16	0	61701	0	0	0	0	303	0	61398	1516.0
11	PM	BRN	1.495	21321	14260	2055	1	0	23375	0	0	0	0	0	0	23375	3380.0
12	PM	KHM	1.110	29167	26267	594	0	0	29761	0	0	0	0	0	0	29761	2722.1
13	PM	IDN	0.801	1562934	1950062	1720	121	0	1564533	0	0	0	0	0	-70	1564603	2867.8
14	PM	LAO	0.878	23799	27105	0	0	0	23799	0	0	0	0	0	0	23799	3398.1
15	PM	MYS	1.787	1245068	696765	38173	20593	0	1262647	0	0	0	0	171378	-2136	1093406	1619.1
16	PM	PHL	1.134	902673	795821	95247	7513	0	990407	0	0	0	0	0	0	990407	1940.2
17	PM	SGP	0.000	0	49398	0	0	0	0	0	0	0	0	0	0	0	1812.3
18	PM	THA	1.273	1288802	1012495	1272	461861	0	828213	0	0	24122	0	0	-854	804946	1404.4
19	PM	VNM	1.446	579502	400700	52629	214	0	1105617	0	0	0	0	0	0	1105617	2174.7
20	PM	XSE	1.220	1110558	910280	6571	0	0	1117129	0	0	30242	0	0	0	1086888	1404.4
21	PM	BGD	0.833	203933	244865	60	0	0	203993	0	0	0	0	0	0	203993	582.5
22	PM	IND	1.204	2204817	1831260	97	5451	0	2199463	0	0	0	0	3	2199460	1038.4	
23	PM	NPL	0.838	23314	27823	185	0	0	23499	0	0	0	0	0	0	23500	2004.3
24	PM	PAK	1.159	713187	615400	1081	1046	0	713222	0	0	0	0	0	-10	713232	1533.7
25	PM	LKA	1.151	101564	88257	1431	1563	0	101433	0	0	0	0	0	0	101432	1131.2
26	PM	XSA	0.790	24533	31044	43645	0	0	68179	0	0	0	0	2167	0	66012	6235.2
27	PM	CAN	1.832	1216108	663995	205665	182671	-15500	1254603	0	0	0	0	0	0	1254603	1964.6
28	PM	USA	2.165	19442813	8979557	82595	3815925	-91767	15801251	0	0	0	0	70000	1	15731249	1174.7
29	PM	MEX	1.739	2735861	1573220	696358	15312	0	3416907	0	0	0	0	0	0	3416908	1820.0
30	PM	XNA	1.175	112	95	5057	0	0	5169	0	0	0	0	2400	0	2769	1174.7
31	PM	ARG	2.229	1671470	749821	9801	246602	0	1434668	0	0	0	0	0	0	1434668	898.8
32	PM	BOL	2.035	361160	177518	1449	1563	0	361046	0	0	0	0	0	0	361046	1847.8
33	PM	BRA	2.085	11172593	5358608	1349	3791704	0	7382238	0	0	0	0	0	1	7382237	1216.4
34	PM	CHL	2.490	616220	247487	63858	108975	0	571103	0	0	0	0	0	-3	571106	1214.0
35	PM	COL	1.000	1053922	1053931	51189	4287	0	1100824	0	0	0	0	0	-74	1100899	1137.4
36	PM	ECU	2.122	328732	154925	1876	402	0	330206	0	0	0	0	0	0	330206	1924.2
37	PM	PRY	1.022	39386	38556	1097	2589	0	37894	0	0	0	0	0	0	37894	1130.6
38	PM	PER	2.022	1024052	506029	20693	2690	0	1041055	0	0	215000	0	0	0	334074	1591.4
39	PM	URY	1.005	76549	76166	1558	9799	0	68308	0	0	0	3789	0	1	64518	1417.5
40	PM	VEN	1.858	1049509	564871	205788	0	0	1255297	0	0	0	0	0	0	1255297	3708.8
41	PM	XSM	1.236	36618	29626	18587	371	0	54833	0	0	0	0	0	0	45500	5788.7
42	PM	CRI	1.704	105315	61807	3519	3686	0	105148	0	0	0	0	0	0	105148	3464.9
43	PM	GTM	1.756	187005	106482	74924	8439	-238	253728	0	0	17930	0	0	0	235798	1820.0
44	PM	HND	1.656	141900	85703	16729	2478	0	156151	0	0	0	0	0	0	156151	1209.5
45	PM	NIC	1.886	97225	51547	3554	309	0	100470	0	0	0	0	0	0	100470	1744.0
46	PM	PAN	1.682	126764	75357	11574	1509	0	136829	0	0	1334	0	29000	0	106495	3464.9

Table A-4-14. Launching pad data of poultry meat in 2010 (continued).

CNO Country No.	PID Prod. code	CID Country code	YPM Yield kg/head ¹	QPM Production t	HPM Head 000/head	IMPM Imports t	EXPM Exports t	STCPM Stock change. t	QDPM Total Supply t	QDLPM Feed demand t	QDSPM Seed demand t	QDWP Loss t	Processing demand			Other demand			QDXPM Error t	QDFPM Food demand t	PPM Firm Price USD/t ¹	
													QDPPM Processing demand t	QDOPM Other demand t	QDOPM Other demand t	QDOPM Other demand t	QDOPM Other demand t	QDOPM Other demand t				QDOPM Other demand t
47	PM	SLV	1.197	103597	86555	11224	6867	-143	108097	0	0	0	0	0	0	0	0	0	0	108097	1592.6	
48	PM	XCA	1.583	13697	8655	128	0	0	13825	0	0	0	0	0	0	0	0	5733	0	8091	1892.1	
49	PM	DOM	1.406	309033	219863	17242	1287	0	324987	0	0	0	0	0	0	0	0	0	0	324987	1041.6	
50	PM	IAM	1.476	102222	69269	43721	345	0	145598	0	0	0	0	0	0	0	0	0	0	145597	3347.8	
51	PM	PRI	0.000	0	35095	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	867.4
52	PM	TTO	1.781	62565	35128	17236	511	0	79291	0	0	0	0	0	0	0	11500	0	67791	2138.8		
53	PM	XCB	1.137	68072	59887	273676	218	-7830	349360	0	0	0	0	0	0	0	17599	0	331761	3347.8		
54	PM	AUT	1.680	132432	78822	97087	63655	-667	166530	0	0	0	0	0	0	0	0	0	0	156664	4254.7	
55	PM	BEL	1.291	389357	301494	194481	447886	0	135951	0	0	0	0	0	0	0	0	0	0	130018	1193.9	
56	PM	CYP	1.855	27632	14898	9343	1135	0	35840	0	0	0	0	0	0	0	0	0	0	29263	2347.9	
57	PM	CZE	1.411	190766	135205	92481	41294	0	241954	0	0	0	0	0	0	0	0	0	0	241954	1419.8	
58	PM	DNK	1.734	185464	106967	65519	123083	0	127900	0	0	0	0	0	0	0	0	0	0	123367	1054.2	
59	PM	EST	1.665	16137	9693	19337	9390	0	26084	0	0	0	0	0	0	0	0	0	0	26085	1323.0	
60	PM	FIN	1.820	100447	55199	13561	11053	0	102955	0	0	0	0	0	0	0	0	0	0	96855	1858.7	
61	PM	FRA	1.778	1751709	985156	373816	570641	0	1554883	0	0	0	0	0	0	0	0	0	0	1484517	2681.3	
62	PM	DEU	1.907	1363849	715312	740270	583079	0	1521040	0	0	0	0	0	0	0	0	0	0	1454372	2462.4	
63	PM	GRC	1.596	122066	76473	66553	19914	0	168704	0	0	0	0	0	0	0	0	0	0	160063	2040.2	
64	PM	HUN	2.437	388217	159282	42359	151765	0	278811	0	0	0	0	0	0	0	0	0	0	254677	1572.5	
65	PM	IRL	1.353	117900	87133	63402	73362	0	107940	0	0	0	0	0	0	0	0	0	0	105040	1211.0	
66	PM	ITA	2.226	1176586	528625	66640	156252	0	1086974	0	0	0	0	0	0	0	0	0	0	1069541	1589.7	
67	PM	LVA	1.572	23201	14756	28220	7341	0	44080	0	0	0	0	0	0	0	0	0	0	44080	1585.6	
68	PM	LTU	1.797	76405	42514	23903	27053	0	73256	0	0	0	0	0	0	0	0	0	0	72589	1406.2	
69	PM	LUX	8.388	1440	172	9881	885	0	10436	0	0	0	0	0	0	0	0	0	0	10436	4327.9	
70	PM	MLT	1.697	4581	2699	8182	15	0	12748	0	0	0	0	0	0	0	0	0	0	10924	1244.9	
71	PM	NLD	1.725	870253	504484	609530	1146862	0	332920	0	0	0	0	0	0	0	0	0	0	281921	1402.4	
72	PM	POL	1.784	1248759	699951	38439	413759	28000	845439	0	0	0	0	0	0	0	0	0	0	832870	1608.0	
73	PM	PRT	1.489	283218	190149	45493	11359	0	317353	0	0	0	0	0	0	0	0	0	0	308642	688.6	
74	PM	SVK	1.555	70048	45047	46179	24426	0	91801	0	0	0	0	0	0	0	0	0	0	90194	1493.9	
75	PM	SVN	1.811	59503	32854	13377	20949	0	51931	0	0	0	0	0	0	0	0	0	0	51044	1594.9	
76	PM	ESP	1.985	1298562	654264	166371	126232	0	1338701	0	0	0	0	0	0	0	0	0	0	1338701	2213.9	
77	PM	SWE	1.460	112784	77246	57071	14688	0	155167	0	0	0	0	0	0	0	0	0	0	146901	1261.6	
78	PM	GBR	1.679	1529196	910855	737374	308193	0	1958377	0	0	0	0	0	0	0	0	0	0	1870044	1605.1	
79	PM	CHE	1.294	68891	53223	56879	350	0	125420	0	0	0	0	0	0	0	0	0	0	125420	2707.8	
80	PM	NOR	1.339	83741	62558	910	48	0	84603	0	0	0	0	0	0	0	0	0	0	83626	2931.5	
81	PM	XEF	1.538	7097	4613	471	0	0	7568	0	0	0	0	0	0	0	0	0	0	7568	3288.1	
82	PM	ALB	0.798	17033	21345	26506	0	0	43540	0	0	0	0	0	0	0	0	0	0	43540	2802.0	
83	PM	BGR	1.772	113608	64096	78638	38731	0	153516	0	0	0	0	0	0	0	0	0	0	152441	1295.1	
84	PM	BLR	1.243	259733	209033	13428	45334	0	227827	0	0	0	0	0	0	0	0	0	0	227627	1375.4	
85	PM	HRV	1.094	31673	28964	14834	8958	0	37549	0	0	0	0	0	0	0	0	0	0	37339	2230.3	
86	PM	ROU	1.532	349146	227932	94359	59091	0	384414	0	0	0	0	0	0	0	0	0	0	384164	1271.8	
87	PM	RUS	1.554	2590777	1666861	688467	4507	0	3274738	0	0	0	0	0	0	0	0	0	0	3265788	1769.7	
88	PM	UKR	1.851	950000	513132	130440	32116	0	1048324	0	0	0	0	0	0	0	0	0	0	1045324	1323.8	
89	PM	XEE	1.458	39208	26883	12449	61	0	51596	0	0	0	0	0	0	0	0	0	0	51596	1675.6	
90	PM	XER	1.578	133915	84868	56918	8604	-857	183085	0	0	0	0	0	0	0	0	0	0	183086	911.0	
91	PM	KAZ	1.578	94811	60080	131004	645	0	225169	0	0	0	0	0	0	0	0	0	0	223169	1468.6	
92	PM	KGZ	1.362	4720	3467	60115	0	-5000	69834	0	0	0	0	0	0	0	0	0	0	37434	2202.0	
93	PM	XSU	1.298	49801	38367	33482	0	0	83283	0	0	672	0	0	0	0	0	0	0	82610	2381.3	

Table A-4-14. Launching pad data of poultry meat in 2010 (continued).

CNO	Country No.	PID	Prod. code	CID	Country code	YPM	Yield kg head ⁻¹	QPM	Production t	HPM	Head 000head ⁻¹	IMPM	Imports t	EXPM	Exports t	STCPM	Stock change. t	QDPM	Total Supply t	QDLPM	Feed demand t	QDSPM	Seed demand t	QDWPM	Loss t	QDPPM	Processing demand t	QDOFM	Other demand t	QDXPM	Error t	QDFPM	Food demand t	PPM	Farm Price USD t ⁻¹
94	PM	ARM			5133		33897	4										0	39260												39260		937.2		
95	PM	AZE			57167		15981	154										-11	83512												83511		9210.8		
96	PM	GEO			12000		41041	558											52483												52483		1971.3		
97	PM	BHR			0		0	0											0	0										0		0		1435.5	
98	PM	IRN			1933350		33123	19384											1947088												1948727		1195.2		
99	PM	ISR			544410		681	9629											535463		1200										494263		1663.6		
100	PM	KWT			43320		199580	792											242108												227108		2305.9		
101	PM	JOR			177067		50102	22101											205067												205067		1727.7		
102	PM	OMN			5968		105672	19173											92467												84442		2305.9		
103	PM	QAT			0		0	0											0												0		1435.5		
104	PM	SAU			538000		543700	28823											1196233												0		0	1435.5	
105	PM	TUR			848328		755	164356											1300465												0		0	2305.9	
106	PM	ARE			42160		33833	21319										476	339395												3509		6871.5		
107	PM	XWS			304130		443560	428078										1143	726020												9333		2305.9		
108	PM	EGY			831685		611542	73276											902605												0		0	3190.2	
109	PM	MAR			473833		89667	2530											610945												610947		1196.6		
110	PM	TUN			151433		273873	358468											1506664												150722		1643.3		
111	PM	XNF			20067		28200	30608											275410													275414		1643.3	
112	PM	BEN			36976		46220	136											117279												0		0	2271.9	
113	PM	BFA			84125		227	1											37108												4		0	1405.9	
114	PM	CMR			67300		30657	16											67526												0		0	1905.5	
115	PM	CIV			37348		116914	6											31788												0		0	1507.7	
116	PM	GHA			7467		6600	52											154256												0		0	1534.2	
117	PM	GIN			286333		254779	26394											312727												0		0	2711.8	
118	PM	NGA			37953		338	12											47202												0		0	2271.9	
119	PM	SEN			27992		11049	926											38115												0		0	2494.8	
120	PM	TGO			34990		113063	65											134660												0		0	2494.8	
121	PM	XWF			90739		44762	1											135435												11333		0	3483.7	
122	PM	XCF			21598		25303	1											134660												0		0	3986.8	
123	PM	XAC			18930		34561	0											247559												0		0	3986.8	
124	PM	ETH			54507		68133	0											54529												0		0	1641.7	
125	PM	KEN			25945		21621	69											25883												0		0	1972.8	
126	PM	MDG			71473		60443	1											71794												0		0	2751.3	
127	PM	MWI			22523		27167	6											22567												0		0	747.3	
128	PM	MUS			46025		1344	112											47257												1148		0	1007.2	
129	PM	MOZ			31385		34221	0											43102												0		0	747.3	
130	PM	RWA			9983		5060	6											9889												0		0	3555.9	
131	PM	TZA			85526		298	13											85810												0		0	1972.8	
132	PM	UGA			58733		45167	10											58880												0		0	3555.9	
133	PM	UGA			41833		562	35											42360												0		0	747.3	
134	PM	ZMB			54328		19679	4											82258												0		0	4333.3	
135	PM	ZWE			1152		54005	0											39543												0		0	3265.2	
136	PM	XEC			35333		4210	0											9801												0		0	1375.3	
137	PM	BWA			5892		7534	13											17844												0		0	1375.3	
138	PM	NAM			11600		14579	380											17844												0		0	1375.3	
139	PM	ZAF			1455073		1026045	13370											1702213												0		0	1375.3	
140	PM	XSC			7210		8130	0											15340												0		0	1375.3	
		XTW			0		0	0											0												0		0	1131.2	

Table A-4-16. Launching pad data of poultry eggs in 2010.

CNO	PID	CID	YEG	QEG	HEG	IMEG	EXEG	STCEG	QDEG	QDEG	QDLEG	QDSEG	QDWEG	QDPEG	QDOEG	QDXEG	QDFEG	PEG
Country No.	Prod. code	Country code	Yield kg/ head ¹	Production t	Head 000/head	Imports t	Exports t	Stock change. t	Total Supply t	Feed demand t	Seed demand t	Loss t	Processing demand t	Other demand t	Error t	Food demand t	Farm Price USD/t ¹	
1	EG	AUS	14.107	176100	12483	3491	571	0	179020	0	35978	1769	0	0	0	1	141272	2581.4
2	EG	NZL	15.264	54905	3597	714	3271	0	52349	0	6847	2032	0	0	0	0	43470	1321.2
3	EG	XOC	3.365	11459	3405	1366	814	0	12010	0	1017	530	0	528	-10	0	9946	3382.6
4	EG	CHN	10.983	27722033	2524000	314	121392	0	27600956	0	678748	1386110	0	471278	2	25064817	1105.1	
5	EG	HKG	4.764	310	65	9905	800	0	99415	0	24	4852	0	2653	1	91886	5076.7	
6	EG	JPN	18.025	2501831	138801	38828	686	0	2539974	0	74667	50078	0	2415229	0	2415229	2084.5	
7	EG	KOR	9.539	627000	65728	3292	318	0	629974	0	58200	31373	0	0	1	540400	1641.7	
8	EG	MNG	4.421	427	97	3413	0	0	3840	0	8	192	0	0	0	3640	1811.4	
9	EG	TWN	9.865	357660	36256	1335	1636	0	357359	0	25923	35779	0	0	0	295658	1105.1	
10	EG	XEA	7.169	113060	15770	8075	1	0	121134	0	2232	6055	0	169	0	112678	1641.7	
11	EG	BRN	4.167	6962	1671	911	0	0	7874	0	1044	764	0	0	0	6066	1229.6	
12	EG	KHM	3.616	21159	5851	67	0	0	21226	0	1600	0	0	0	0	19626	1522.9	
13	EG	IDN	5.422	1324581	244299	5384	40	0	1329925	0	167441	91339	0	0	0	1071145	1592.3	
14	EG	LAO	5.613	15466	2755	0	0	0	15466	0	1869	773	0	0	0	12823	3667.2	
15	EG	MYS	7.686	586647	76327	604	108598	-7	478660	0	72680	22915	0	14	-201	383252	1504.4	
16	EG	PHL	5.071	424401	83700	3733	3	0	428131	0	54150	13434	0	0	0	360547	1891.5	
17	EG	SGP	0.000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2201.5
18	EG	THA	8.337	982082	117804	1833	15698	0	968217	0	149774	49109	0	0	-1	769335	1391.4	
19	EG	VNM	4.621	313067	67753	56	1844	0	311279	0	23356	0	0	0	0	287923	2417.3	
20	EG	XSE	6.207	382708	61659	1310	0	0	384019	0	53274	19201	0	0	0	311544	1391.4	
21	EG	BGD	1.909	257333	134767	0	0	0	257333	0	22833	25733	0	0	0	208767	1868.2	
22	EG	IND	11.328	3358147	296450	190	70094	3333	3284909	0	142600	335832	0	0	-1	2806477	575.3	
23	EG	NPL	4.450	33260	7474	22	0	0	33282	0	2286	969	0	0	0	30027	2076.2	
24	EG	PAK	5.242	571013	108933	1024	1118	0	570918	0	36693	57179	0	0	0	477047	787.1	
25	EG	LKA	8.820	65665	7445	443	194	0	65914	0	7223	3289	0	0	1	55401	1817.1	
26	EG	XSA	1.867	16777	8987	21526	0	0	38304	0	2315	3327	0	1667	0	30995	2948.8	
27	EG	CAN	16.992	450640	26521	34934	10611	0	474963	0	40692	8787	0	0	-1	425485	1835.7	
28	EG	USA	15.909	5400206	339445	7441	172535	0	5235112	0	758033	110000	0	0	0	4367078	1168.0	
29	EG	MEX	12.942	2400136	185457	17535	4229	0	2413442	0	111304	240893	0	0	0	2061245	1018.4	
30	EG	XNA	9.820	363	37	512	0	0	875	0	8	44	0	174	0	649	1168.0	
31	EG	ARG	14.464	550733	38076	833	11473	0	540094	0	43920	27537	0	0	0	468637	812.5	
32	EG	BOL	4.269	70160	16433	464	0	0	70624	0	11689	5617	0	0	0	53318	1341.7	
33	EG	BRA	6.871	2105793	306467	182	39714	0	2066260	0	367035	65920	0	0	0	1633306	1380.2	
34	EG	CHL	17.632	193066	10950	382	94	0	193355	0	19530	9655	0	0	0	164170	1803.9	
35	EG	COL	15.377	601864	39142	1032	455	0	602441	0	84500	40934	0	0	0	477007	1641.7	
36	EG	ECU	18.431	111200	6033	4493	85	0	115609	0	12787	4598	0	0	0	98224	1295.2	
37	EG	PER	13.228	128815	9738	1087	0	-118	12902	0	1726	3896	0	0	0	124279	848.9	
38	EG	PER	17.892	290488	16235	390	4047	0	286949	0	36117	46667	0	0	0	204165	1329.7	
39	EG	URY	8.866	53194	6000	490	111	0	53574	0	6262	2661	0	0	-1	44651	1499.8	
40	EG	VEN	15.995	242538	15164	1835	0	0	244373	0	38500	12165	0	0	-17	193708	4035.0	
41	EG	XSM	3.167	3029	956	1852	17	0	4864	0	2088	244	0	0	0	2549	2668.3	
42	EG	CRI	18.960	53030	2797	1231	1451	0	52810	0	7242	1070	0	0	0	44498	1080.0	
43	EG	GTM	13.489	219426	16267	1874	147	0	221153	0	7802	4417	0	0	0	208934	1018.4	
44	EG	HND	11.091	46415	4185	1286	449	0	47252	0	8297	954	0	0	0	38002	2540.0	
45	EG	NIC	8.147	24662	3027	3652	0	0	28314	0	3868	566	0	0	0	23880	2259.5	
46	EG	PAN	8.243	24634	2988	137	1079	0	23692	0	5340	1233	0	0	0	17118	3072.6	

Table A-4-16. Launching pad data of poultry eggs in 2010 (continued).

CNO	PID	CID	YEG	QEG	HEG	IMEG	EXEG	STCEG	QDEG	QDLEG	QDSEG	QDWEG	QDPEG	QDOEG	QDXEG	QDFEG	PEG
Country No.	Prod. code	Country code	Yield kg/head ¹	Production t	Head 000/head	Imports t	Exports t	Stock change. t	Total Supply t	Feed demand t	Seed demand t	Loss t	Processing demand t	Other demand t	Error t	Food demand t	Farm Price USD ¹
47	EG	SLV	13038	62887	4823	719	979	0	62626	0	8322	1906	0	0	0	52399	1816.1
48	EG	XCA	0000	2243	0	107	3	0	2347	0	576	118	0	0	-1	1654	1250.0
49	EG	DOM	15204	98350	6469	836	0	0	99186	0	16900	4960	0	0	0	77327	1369.1
50	EG	IAM	6193	6895	1113	3972	7	0	10860	0	5349	540	0	0	0	4972	1898.0
51	EG	PRI	0000	0	1139	0	0	0	0	0	0	0	0	0	0	0	2179.0
52	EG	TTO	5499	5067	921	3655	16	0	8705	0	2750	401	0	0	0	5554	1379.6
53	EG	XCB	7214	122543	16986	4747	20	0	127269	0	4251	6377	0	475	1	116165	3955.2
54	EG	AUT	16577	96444	5818	35771	12424	0	119790	0	5290	0	0	0	0	114500	2819.8
55	EG	BEL	18153	163742	9020	81884	89784	0	155841	0	17413	4349	0	-71	0	134150	948.3
56	EG	CYP	16100	9295	577	1411	145	0	105660	0	889	491	0	0	0	9180	2348.5
57	EG	CZE	14901	137546	9231	38294	13403	0	162436	0	15373	3200	0	0	0	143863	1553.0
58	EG	DNK	20819	76301	3665	39642	12516	0	103427	0	13000	767	0	-79	0	89739	1765.8
59	EG	EST	17743	11202	631	6811	2049	0	15964	0	708	0	0	173	0	15083	1462.1
60	EG	FIN	18516	59400	3208	1977	9776	0	51601	0	4268	604	0	0	0	46729	1234.4
61	EG	FRA	16311	904700	55466	132890	108388	0	929203	0	72933	7800	0	12000	-6254	842724	1420.1
62	EG	DEU	19613	714567	36433	532959	147332	0	1100193	0	60667	6567	0	0	0	1032960	2541.3
63	EG	GRC	9102	100533	11045	10226	2862	0	107897	0	4191	2134	0	1067	0	100505	3303.1
64	EG	HUN	11543	152029	13171	15263	11733	0	155559	1267	12806	1751	0	0	0	139735	1705.4
65	EG	IRL	11586	44200	3815	10872	5267	0	49805	0	6417	4974	0	0	-1475	39889	1508.5
66	EG	ITA	11464	768100	67000	40835	42821	0	766114	0	41487	1950	0	0	-816	723493	1524.0
67	EG	LVA	19629	43296	2206	7100	19698	-10	30708	0	1174	0	0	0	0	29534	1422.9
68	EG	LTU	50488	50488	8586	4062	11288	233	43028	0	3681	10	0	54	0	39283	1481.0
69	EG	LUX	18335	1516	83	3917	332	0	5101	0	75	0	0	0	0	5027	3138.9
70	EG	MLT	16058	5160	321	649	0	0	5809	0	200	239	0	769	0	4600	1558.7
71	EG	NLD	15940	666667	41823	179247	576053	0	269860	0	49333	2000	0	0	-297	218824	1164.3
72	EG	POL	12220	606235	49610	34626	178023	-986	463824	1000	58583	1667	0	0	0	402574	1241.5
73	EG	PRT	20223	126666	6263	17936	20860	0	123742	0	21771	2724	0	0	-1522	100769	1696.9
74	EG	SVK	12407	77176	6220	15406	15021	0	77561	0	3512	1675	0	0	0	72374	1302.2
75	EG	SVN	14560	21524	1478	3359	2176	0	22707	0	1910	0	0	0	-10	20807	741.8
76	EG	ESP	16290	821442	50425	36667	149811	1884	706413	177	52370	16535	0	0	0	637332	1819.0
77	EG	SWE	18759	110667	5899	18912	6421	0	123158	0	5847	2310	0	0	0	115088	1824.0
78	EG	GBR	14164	653333	46127	97503	14832	0	736004	0	71433	4600	0	0	-87	659971	930.7
79	EG	CHE	18684	44799	2398	44571	257	0	89112	0	3165	2344	0	0	0	83603	4931.0
80	EG	NOR	15098	59100	3914	922	699	0	59323	0	4314	1197	0	0	0	53812	2343.0
81	EG	XEF	15378	3055	199	127	6	0	3176	0	369	154	0	0	0	2653	2595.9
82	EG	ALB	7180	31232	4350	7180	2700	0	28656	0	36	4797	0	0	-2	23825	2453.2
83	EG	BGR	12691	84148	6631	4252	12957	-402	75844	0	5385	852	0	0	-36	69643	1779.4
84	EG	BLR	13217	199130	15067	1514	34285	0	166359	0	13547	0	0	53	0	152759	1386.1
85	EG	HRV	8884	44303	4987	2958	760	0	46501	0	2450	0	0	0	0	44052	2248.4
86	EG	ROU	6939	312298	45005	23969	8160	0	328107	0	15292	9707	0	22567	-1	280542	2954.8
87	EG	RUS	14763	2263161	153295	22567	14038	0	2271690	0	124742	4967	0	584	0	2141399	1418.2
88	EG	UKR	11144	1015267	91107	4577	36998	0	982846	16333	40310	1721	0	145600	0	778882	1019.3
89	EG	XEE	12161	38514	3167	458	207	500	38265	0	1701	675	0	0	0	35889	1145.4
90	EG	XER	7028	103472	14722	4679	3765	0	104386	0	5288	0	0	0	0	99098	2217.7
91	EG	KAZ	12923	200783	15537	15365	3	0	216145	51191	4564	22933	0	351	0	137107	1561.2
92	EG	KGZ	6732	21229	3153	3012	10	0	24231	0	294	0	0	538	0	23399	2015.4
93	EG	XSU	9154	237676	25963	6349	0	0	244025	0	3011	3417	0	53246	0	184351	1481.8

Table A-4-17. Launching pad data of raw milk in 2010.

CNO	PID	Country	CID	YMK	QMK	FMK	IMMK	EXMK	STCMK	QDMK	QDLMK	QDSMK	QDWMK	QDPMK	QDOMK	QDXMK	QDFMK	PMK		
No.	Prod. code	code	code	thead ¹	Production	Head	Imports	Exports	Stock change.	Total Supply	Feed demand	Seed demand	Loss	Processing demand	Other demand	Error	Food demand	Farm Price		
					t	000head	t	t	t	t	t	t	t	t	t	t	t	USD/t ¹		
1	MK	AUS		5.710	9170667	1605983	92989	1060952	104000	8098703	35000	0	0	5932867	0	0	1	2130836	362.4	
2	MK	NZL		3.679	16944153	4605277	24174	6618482	-41042	10390887	50000	0	169446	9939350	0	0	2	232089	384.9	
3	MK	XOC		1.312	68111	51903	65841	1401	132551	1401	346	0	2848	46500	11763	0	7	11093	371.1	
4	MK	CHN		1.804	40761319	22590421	2130742	873288	0	42804733	164667	0	1180012	3290000	0	0	0	38170053	444.1	
5	MK	HKG		3.000	12	4	490794	43177	0	447629	0	0	2757	0	33250	0	0	411621	1791.8	
6	MK	JPN		7.493	7701726	1027867	65454	9422	-105	7757863	44667	0	41431	1812208	0	1	1	5900987	1027.1	
7	MK	KOR		9.618	2065403	214733	22618	9629	0	2078392	0	0	41431	1642300	153	0	0	394508	667.7	
8	MK	MNG		0.317	385914	1217900	2633	388547	0	388547	26881	0	7856	28481	0	0	0	323330	1082.6	
9	MK	TWN		5.936	353459	59541	235969	2393	0	587034	0	0	18886	286	0	0	0	567862	444.1	
10	MK	XEA		2.345	96133	41000	36777	263	-7062	132648	0	0	4807	0	326	0	1	127514	1027.1	
11	MK	BRN		0.275	92	336	12593	5	0	19743	0	0	0	0	0	0	1	19742	1518.2	
12	MK	KHM		0.170	23857	140333	15617	0	0	39473	0	0	1358	0	0	0	0	38115	493.5	
13	MK	IDN		0.816	1323221	1622498	414753	148842	0	1589132	79667	0	45600	92454	9246	0	0	1362166	598.1	
14	MK	LAO		0.200	7333	36667	10072	0	0	17405	3776	0	378	0	0	0	0	13252	1322.0	
15	MK	MYS		0.495	75957	153600	217473	136746	-10256	156684	0	0	4028	7132	0	-4228	0	149752	563.5	
16	MK	PHL		2.767	15588	5633	324452	228786	0	121510	0	0	0	0	0	0	0	121510	309.8	
17	MK	SGP		0.000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4349.4	0
18	MK	THA		3.457	911230	263627	231602	122238	0	1020594	0	0	27337	46200	0	0	0	947056	493.5	
19	MK	VNM		2.280	342421	150173	243703	21133	0	564990	0	0	10507	0	0	0	0	554483	493.5	
20	MK	XSE		0.512	1596291	315307	66059	0	0	1662350	0	0	79651	707856	0	0	0	874843	493.5	
21	MK	BGD		0.464	3373603	7278100	249354	6	0	3622951	0	0	292281	515733	0	0	0	2814936	212.2	
22	MK	IND		1.472	122058667	82904699	38168	17825	0	122079009	0	0	1464704	59448000	0	5	61166300	225.1		
23	MK	NPL		0.665	1586879	2387257	16407	1	0	1603285	0	0	75001	518667	0	0	0	1009617	495.2	
24	MK	PAK		1.398	35503000	22213525	27653	50463	74	35480116	1736400	0	2928167	13032350	0	-1	1778201	294.3		
25	MK	LKA		0.613	213619	348679	510050	1819	0	721849	0	0	10683	15333	32770	0	0	663063	380.8	
26	MK	XSA		0.366	1732000	4735619	48564	80	1282	1779202	0	0	54686	792648	1667	1	930200	571.6		
27	MK	CAN		8.541	8285433	970067	52284	14802	-2667	8325582	0	0	0	7260667	0	-2626	1067541	693.1		
28	MK	USA		9.323	87444488	9182033	89100	336567	-36761	87233782	435434	0	541920	52290132	156	-9881	34517941	363.7		
29	MK	MEX		4.403	10812761	2455916	645168	132796	-6146	11331279	0	0	0	1889333	0	1	8900025	359.1		
30	MK	XNA		3.713	1423	383	156	0	0	1580	0	0	0	0	230	0	0	1350	363.7	
31	MK	ARG		5.020	10626690	2116667	7870	1474312	0	9160248	0	0	0	6217027	0	0	2943222	306.1		
32	MK	BOL		1.266	465871	368090	16258	27583	0	454546	0	0	23298	80497	0	0	350751	241.8		
33	MK	BRA		1.318	30779465	23350852	463739	173069	0	31070135	306416	0	1539434	2629133	0	-140	26595292	417.1		
34	MK	CHL		2.398	2509849	1046625	24979	202051	0	2332777	165000	0	39493	1265896	0	0	862388	332.6		
35	MK	COL		1.143	6284896	5500296	20132	10493	0	6294535	251406	0	43961	906667	0	-561	4697063	369.7		
36	MK	ECU		1.726	2181691	1263695	5719	6811	0	2180599	34434	0	43644	736741	0	0	1365781	350.0		
37	MK	PRY		2.332	489783	210000	11811	1879	0	499715	0	0	24502	7733	0	0	467480	125.4		
38	MK	PER		2.077	1715081	825767	71179	134200	0	1652060	10000	0	31128	252554	0	0	1358378	345.3		
39	MK	URY		2.564	1937704	755667	210	457324	-31445	1512036	116262	0	96885	891000	0	1	407888	318.0		
40	MK	VEN		1.163	2365462	2033367	1525173	1	-85742	3976376	0	0	28843	2003227	0	-1	1944307	772.8		
41	MK	XSM		1.174	48676	41477	22307	778	0	70206	164	0	328	583	0	0	69131	716.4		
42	MK	CRI		1.360	943285	693754	17847	108300	0	852832	0	0	47179	145000	20	-3684	664316	427.4		
43	MK	GTM		0.733	463151	632220	153438	2355	0	614234	0	0	0	197669	0	-3	416568	288.2		
44	MK	HND		1.286	691430	537547	19508	4331	0	706607	0	0	0	157667	0	0	548940	387.3		
45	MK	NIC		0.751	763363	1016773	17034	93869	0	686528	17000	0	38213	283254	17667	0	0	330394	359.9	
46	MK	PAN		1.064	195326	183500	27154	11340	0	211139	0	0	0	36949	0	0	174190	729.4		

Table A-4-17. Launching pad data of raw milk in 2010 (continued).

CNO	PID	CID	YMK	QMK	HMK	IMMK	EXMK	STCMK	QDMK	QDLMK	QDSMK	QDWMK	QDPMK	QDOMK	QDXMK	QDFMK	PMK
Country No.	Prod. code	Country code	Yield t/head ¹	Production t	Head 000/head	Imports t	Exports t	Stock change. t	Total Supply t	Feed demand t	Seed demand t	Loss t	Processing demand t	Other demand t	Error t	Food demand t	Farm Price USD/t ¹
47	MK	SLV	1.863	494790	265646	78613	2094	-104	571413	0	0	25011	29933	0	0	516468	509.7
48	MK	XCA	0.936	3675	3926	9163	1	0	12837	0	0	199	0	0	0	12638	355.0
49	MK	DOM	1.453	539459	371287	3961	0	0	543420	0	0	27017	73600	0	0	442803	466.5
50	MK	JAM	3.186	191005	59957	9144	904	0	199244	0	0	634	0	0	0	198610	511.6
51	MK	PRI	0.000	0	97855	0	0	0	0	0	0	0	0	0	0	0	806.7
52	MK	TTO	0.369	4922	13333	50334	1591	-370	54036	0	0	278	0	-1	53758	415.4	
53	MK	XCB	1.031	728940	706831	585218	122	-2166	1316202	0	0	35658	133129	72526	-1	1075091	1467.1
54	MK	AUT	6.123	3293286	537822	138066	780273	-2222	2653301	156033	0	33217	2329791	0	0	134261	981.9
55	MK	BEL	6.031	3049245	505616	875380	822332	0	3102293	11218	0	0	2442000	0	0	649074	382.2
56	MK	CYP	3.162	198714	62842	5076	36	0	203754	30972	0	17770	28501	23233	0	103277	886.1
57	MK	CZE	7.035	2744364	390122	97059	713316	0	2128107	38977	0	37218	1779290	0	0	272621	392.5
58	MK	DNK	8.609	4867967	565479	91718	1006332	0	3953352	93359	0	0	3610200	0	-1	249793	450.0
59	MK	EST	7.025	679996	96800	14527	81711	1325	611487	10359	0	0	339100	0	0	163595	369.4
60	MK	FIN	8.057	2322996	288304	87707	198332	14862	2197509	44107	0	0	1442300	32258	0	678844	551.5
61	MK	FRA	6.149	24351849	3960417	917035	2722302	102523	22444060	898187	0	44833	19046079	0	0	2454961	440.2
62	MK	DEU	7.094	29729673	4190806	2222252	3698007	0	28253918	1041880	0	40000	20768296	0	-1	6403743	408.8
63	MK	GRC	1.546	1985459	1284163	490932	34316	0	2442075	40363	0	30919	1278600	15539	1	1076653	879.8
64	MK	HUN	5.379	1723831	320500	248086	271685	0	1700232	77811	0	37435	906074	0	0	678912	432.5
65	MK	IRL	4.900	5363993	1094800	338799	526628	0	5176164	87422	0	0	4608616	10000	0	470126	368.7
66	MK	ITA	4.185	11148733	2664173	2156753	31653	0	13273833	140803	0	0	11121816	0	-2	2011215	533.3
67	MK	LVA	5.001	837049	167367	39487	214839	1030	660666	101505	0	1533	454857	3827	0	98943	537.2
68	MK	LTU	4.890	1771314	362258	299248	299641	0	1770921	107998	0	19949	1336600	16000	0	306374	325.7
69	MK	LUX	7.130	292286	40995	34118	205287	0	121117	19802	0	0	37420	9436	0	47895	405.5
70	MK	MLT	5.692	43984	7727	8284	29	0	52239	1705	0	4458	955	0	0	35685	608.9
71	MK	NLD	7.433	11763357	1582916	718043	1113140	0	11370259	0	0	0	9297967	0	-136271	2208563	442.7
72	MK	POL	4.863	12399687	2549622	117415	326700	0	12190402	564961	0	166135	10398111	0	1	1061195	399.8
73	MK	PRT	6.849	2019130	363509	328263	328263	0	2054376	13584	0	2103	1507506	61826	0	469357	790.8
74	MK	SVK	5.246	951527	181385	117524	179928	0	889122	9101	0	153	651801	0	0	228067	724.4
75	MK	SVN	5.278	628944	112750	101377	248046	0	482275	13232	0	9339	375700	0	0	84004	373.4
76	MK	ESP	5.921	7402884	1250333	1335448	333802	0	8404530	689009	0	0	3456879	40233	0	4226509	722.9
77	MK	SWE	8.338	2922033	350455	256794	307448	0	2871380	13333	0	0	2239033	558055	0	619013	473.6
78	MK	GBR	7.555	13924000	1843000	408075	552817	0	13779258	150000	0	0	5957667	220858	0	7113537	384.1
79	MK	CHE	6.835	4114700	602000	18422	24575	0	4108547	745801	0	0	2310019	40000	0	831870	616.3
80	MK	NOR	6.424	1568076	244093	5005	2144	0	1570937	115000	0	2274	1082691	40000	0	330972	724.1
81	MK	XEF	4.330	124261	28700	87	954	0	12394	1761	0	0	90333	0	0	31300	567.7
82	MK	ALB	1.970	1072009	544180	11321	108	0	1083222	96566	0	80153	172533	0	0	733969	464.4
83	MK	BGR	2.816	1264998	449240	116204	14894	0	1366308	259300	0	20137	557038	0	0	529834	502.0
84	MK	BLR	4.492	6567300	1461957	13520	691034	0	5889786	1097596	0	500	4273749	0	0	517941	274.1
85	MK	HRV	3.908	801904	205180	102257	41962	0	862199	1475	0	8430	382912	0	0	469381	943.9
86	MK	ROU	2.457	5343598	2174437	151762	49766	0	5445593	161889	0	30388	649233	0	0	4604083	578.4
87	MK	RUS	3.768	32015396	8496399	83308	94200	0	32004504	5033151	0	34899	9940333	0	0	16996121	405.5
88	MK	UKR	4.036	11314747	2803315	10913	37185	0	11288475	1178517	0	7667	3497167	409911	0	6195213	331.6
89	MK	XEE	2.479	575291	232051	17359	6035	0	586615	29647	0	392	130167	0	0	426409	329.7
90	MK	XER	2.582	2872801	1112519	130072	102105	10000	2890768	210784	0	105121	594575	0	-2	1980289	474.6
91	MK	KAZ	2.210	5305877	2401389	175480	2512	0	5478846	659667	0	31254	579867	210174	0	3997885	813.3
92	MK	KGZ	1.899	1344242	708040	7891	28709	0	1323423	134445	0	13059	134403	0	0	1041517	306.9
93	MK	XSU	1.609	9032067	5612173	7272	0	0	9039339	4077905	0	10660	328827	0	0	4621947	347.1

Table A-4-18. Launching pad data of skimmed milk in 2010.

CNO	PID	CID	YSK	QSK	QMK	IMSK	EXSK	STCSK	QDSK	QDLSK	QDSSK	QDWSK	QDPSK	QDOSK	QDXSK	QDFSK	PSK
Country No.	Prod. code	Country code	Prod. Rate %	Production t	Raw milk production t	Imports t	Exports t	Stock change t	Total Supply t	Feed demand t	Seed demand t	Loss t	Processing demand t	Other demand t	Error t	Food demand t	Price USDt ⁻¹
1	SK	AUS	30.562	2802720	9170667	75944	1500805	-33333	1411192	507865	0	0	0	130000	0	773327	28730
2	SK	NZL	39.896	6759999	16944153	25391	3976150	154850	2654391	594633	0	0	0	2043185	0	16573	28019
3	SK	XOC	63.492	43245	68111	15976	239	0	58982	43649	0	0	0	504	0	14828	28019
4	SK	CHN	6.085	2480372	40761319	1039916	97682	0	3422605	1093443	0	248261	703333	0	0	1377567	4372.2
5	SK	HKG	0.000	0	12	82248	16084	-1611	67775	0	0	0	0	1752	0	66023	4372.2
6	SK	JPN	22.353	1721598	7701726	408970	1736	0	2128832	32116	0	0	573367	191311	-1	1332039	6860.3
7	SK	KOR	75.539	1560185	2065403	248566	5663	0	1803088	1328639	0	0	0	71034	-1	403416	6860.3
8	SK	MNG	3.133	12090	385914	2191	0	0	14281	2406	0	0	0	200	0	11676	4372.2
9	SK	TWN	0.076	269	353459	200932	4777	-2111	198536	19830	0	0	0	522	0	178184	4372.2
10	SK	XE/A	0.000	0	96133	9844	0	0	9844	0	0	0	0	0	0	9844	6860.3
11	SK	BRN	0.000	0	92	1082	0	-6833	7915	0	0	0	0	0	0	7915	4372.2
12	SK	KHM	0.000	0	23857	6320	7	0	6313	0	0	0	0	0	0	6313	4372.2
13	SK	IDN	5.939	78586	1323221	1332863	28468	0	1382981	0	0	0	0	20022	0	1362958	4372.2
14	SK	LAO	0.000	0	7333	2733	0	0	2733	0	0	0	0	0	0	2733	4372.2
15	SK	MYS	8.638	6561	75957	937759	173555	0	770766	62437	0	0	0	31256	0	677073	4372.2
16	SK	PHL	0.000	0	15588	1051555	1557	0	1049999	0	0	0	0	37331	0	1012667	4372.2
17	SK	SGP	0.000	0	0	0	0	0	0	0	0	0	0	0	0	0	4372.2
18	SK	THA	0.656	5976	911230	590025	30841	1111	564050	0	0	0	0	4145	0	559905	4372.2
19	SK	VNM	0.000	0	342421	584762	964	0	583798	0	0	0	0	0	0	583798	4372.2
20	SK	XSE	42.570	679542	1596291	31301	964	0	710843	0	0	33977	645565	378	0	30923	4372.2
21	SK	BGD	13.854	467363	3373603	267080	0	0	734443	467759	0	0	0	0	0	266683	4372.2
22	SK	IND	45.230	55207111	122058667	186858	377299	0	55016670	18692490	0	2670356	0	12878	3	33640944	4372.2
23	SK	NPL	30.971	491473	1586879	13865	652	0	504687	227967	0	0	0	0	0	276719	4372.2
24	SK	PAK	33.769	11988960	35503000	158104	34674	0	12112389	5300	0	549836	0	0	0	11557253	4372.2
25	SK	LKA	6.819	14567	213619	71313	46	0	85833	4978	0	729	0	0	0	80126	4372.2
26	SK	XSA	35.858	621089	1732000	77114	0	0	698173	107376	0	0	0	0	0	590797	4372.2
27	SK	CAN	34.047	2820940	8285433	191325	98045	54973	2859246	514911	0	0	175167	1137871	0	1031298	5945.7
28	SK	USA	15.400	13466667	87444488	1770747	4002523	36775	11198116	27069	0	0	1315417	2108045	0	7752585	2643.3
29	SK	MEX	3.687	398677	10812761	1677993	37126	0	2039543	10320	0	0	0	301267	0	1727956	2930.4
30	SK	XNA	0.000	0	1423	1641	0	0	1641	0	0	0	0	327	0	1314	2643.3
31	SK	ARG	8.770	931922	10626690	1467	383350	0	550038	467601	0	46596	0	14778	0	21064	4807.1
32	SK	BOL	6.165	28720	465871	3797	12230	0	20287	13730	0	0	0	0	0	6557	3466.2
33	SK	BRA	6.954	2140523	30779465	213410	3355	0	2350578	1438100	0	0	60667	26878	0	824934	3466.2
34	SK	CHL	24.161	606400	2509849	40453	13606	0	633247	440220	0	30323	25000	1567	0	136138	4807.1
35	SK	COL	7.943	499200	6284896	12031	3358	-3333	511207	498376	0	0	0	4700	0	8130	3466.2
36	SK	ECU	3.675	80167	2181691	434	7779	-167	72988	73764	0	0	0	45	-1233	3466.2	
37	SK	PRY	1.468	7192	489783	4850	365	0	11677	0	0	0	0	0	0	11677	4807.1
38	SK	PER	4.011	68787	1715081	136238	1744	0	203280	51312	0	0	16000	2345	0	133623	3466.2
39	SK	URY	23.309	451650	1937704	8016	203174	11667	244825	31174	0	22582	130667	16622	0	43779	4807.1
40	SK	VEN	1.682	39791	2365462	69311	0	0	109102	0	0	0	0	19722	0	89380	3466.2
41	SK	XSM	1.138	554	48676	35242	457	167	35172	0	0	0	0	0	-11	35183	3466.2
42	SK	CRI	13.563	127933	943285	1998	14100	0	115832	0	0	0	108163	922	0	6747	2930.4
43	SK	GTM	5.804	26883	463151	34821	576	0	61129	0	0	0	0	11	-200	61318	2930.4
44	SK	HND	19.007	131417	691430	44132	12948	0	162601	0	0	0	129476	178	0	32948	2930.4
45	SK	NIC	1.718	13113	763363	2938	4523	-303	11830	0	0	0	8746	22	-1	3063	2930.4
46	SK	PAN	0.478	933	195326	17861	577	0	18218	0	0	0	0	4244	0	13973	2930.4

Table A-4-18. Launching pad data of skimmed milk in 2010 (continued).

CNO	PID	CID	YSK	QSK	QMK	IMSK	EXSK	STCSK	QDSK	QDLSK	QDSK	QDSSK	QDWSK	QDPSK	QDOSK	QDXSK	QDFSK	PSK	
Country No.	Prod. code	Country code	Prod. Rate %	Production t	Raw milk production t	Imports t	Exports t	Stock change t	Total Supply t	Feed demand t	Seed demand t	Loss t	Processing demand t	Other demand t	Error t	Food demand t	Price USD ^{t-1}		
47	SK	SLV	0.934	4623	494790	11768	7	0	16385	0	0	0	0	0	422	0	15962	2930.4	
48	SK	XCA	0.000	0	3675	4293	0	0	4293	0	0	0	0	0	0	0	4293	2930.4	
49	SK	DOM	8.230	44397	539459	59113	10	0	103500	0	0	0	0	0	0	0	103500	2930.4	
50	SK	IAM	0.000	0	191005	26835	142	0	26835	0	0	0	0	0	711	0	25982	2930.4	
51	SK	PRI	0.000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2930.4
52	SK	TTO	0.000	0	4922	29759	890	-28433	143011	4219	0	0	0	0	22	0	28847	2930.4	
53	SK	XCB	4.565	33273	728940	81345	40	122542	939059	236930	0	0	0	0	3046	0	135746	2930.4	
54	SK	AUT	30.651	1009418	3293286	252492	200309	-195939	1623756	327680	0	0	0	555267	34748	0	112115	2902.7	
55	SK	BEL	79.370	2420200	3049245	1187301	2003339	0	1623756	0	0	0	0	842800	108744	0	344532	2902.7	
56	SK	CYP	0.000	0	198714	9232	34	0	9198	300	0	0	0	0	413	0	8484	2902.7	
57	SK	CZE	36.946	1013933	2744364	33084	144482	4107	902535	256132	0	0	0	119903	36253	0	490247	2902.7	
58	SK	DNK	30.545	1486900	4867967	124595	200054	722	1407334	293364	0	0	0	763333	112978	0	237659	2902.7	
59	SK	EST	24.090	163812	679996	14121	70796	0	106415	26372	0	0	0	0	0	0	80043	2902.7	
60	SK	FIN	51.630	1199367	2322996	25415	556	0	1224226	25000	0	0	0	918867	30359	0	250000	2902.7	
61	SK	FRA	43.719	10646267	24351849	335843	1934782	0	9047328	937045	0	0	0	5950288	462993	-1	1697002	2902.7	
62	SK	DEU	40.375	12003333	29729673	1309998	3047101	0	10266231	517380	0	0	0	3971237	679073	0	5098541	2902.7	
63	SK	GRC	3.307	65658	1985459	172489	8018	16667	230129	69782	0	0	0	71667	24954	-3	63729	2902.7	
64	SK	HUN	11.923	205530	1723831	19177	80050	0	127990	26667	0	0	0	91667	4045	-1	5613	2902.7	
65	SK	IRL	53.332	2860702	5363993	67525	1754326	0	1173901	210294	0	0	0	142651	588737	0	185552	2902.7	
66	SK	ITA	27.439	3059092	11148733	1658846	185852	0	4532086	385290	0	0	0	78874	248340	0	1881716	2902.7	
67	SK	LVA	25.966	217350	837049	23885	40464	-261	201032	79195	0	0	0	310	0	0	121527	2902.7	
68	SK	LTU	28.720	508725	1771134	2109	7673	4000	503161	82494	0	0	0	326667	0	0	94000	2902.7	
69	SK	LUX	8.945	26146	292286	7777	1156	0	28767	0	0	0	0	0	211	0	28556	2902.7	
70	SK	MLT	0.000	0	43984	8260	113	0	8146	4247	0	0	0	0	33	0	3870	2902.7	
71	SK	NLD	22.580	2656667	11765357	1996966	2536657	0	2116976	1057634	0	0	0	321333	0	-3	738008	2902.7	
72	SK	POL	33.116	4106293	12399687	565711	1178412	0	3493592	1757305	0	0	0	472912	446896	0	751095	2902.7	
73	SK	PRT	814393	2019130	77459	7459	55074	0	836778	34564	0	0	0	32373	3411	0	766431	2902.7	
74	SK	SVK	25.661	244167	951527	79659	67922	0	255903	170971	0	0	0	5299	7427	-4	69576	2902.7	
75	SK	SVN	32.046	201550	628944	14869	10727	0	205691	27005	0	0	0	0	1422	0	177264	2902.7	
76	SK	ESP	27.947	2068865	7402884	561723	90803	-556	2539786	1381748	0	0	0	728454	346372	-1	83211	2902.7	
77	SK	SWE	46.395	1355667	2922033	65062	270170	0	1151114	7093	0	0	0	222333	1333	1	920354	2902.7	
78	SK	GBR	19.949	2777700	13924000	952804	713195	0	3017309	857810	0	0	0	664667	253756	0	1241077	2902.7	
79	SK	CHE	19.730	811833	4114700	73243	217110	11327	656639	79780	0	0	0	417916	42151	-1	116793	2902.7	
80	SK	NOR	36.659	574847	1568076	7733	3855	0	578725	66667	0	0	0	191000	24687	0	286926	2902.7	
81	SK	XEF	44.299	55047	124261	279	5149	0	50177	32966	0	0	0	1700	211	-1	15300	2902.7	
82	SK	ALB	5.701	61119	1072009	7445	25	0	68538	0	0	0	0	0	0	0	67920	2902.7	
83	SK	BGR	1.827	23117	1264998	52674	1463	0	74328	17593	0	0	0	0	11067	0	44979	2902.7	
84	SK	BLR	34.375	2257530	6567300	5927	1029426	0	1234030	585181	0	0	0	21591	0	0	627258	3308.9	
85	SK	HRV	12.310	98716	801904	2657	2825	0	98548	9964	0	0	0	0	1734	0	86850	2902.7	
86	SK	ROU	3.264	174420	5343598	50493	6697	0	218216	110010	0	0	0	0	0	0	108205	2902.7	
87	SK	RUS	19.840	6351900	32015396	368851	38117	0	6682633	3436494	0	0	0	850000	769089	1	1500000	3308.9	
88	SK	UKR	14.375	1626510	11314747	42093	428013	-53333	1293923	1192573	0	0	0	0	0	0	67752	3308.9	
89	SK	XEE	15.385	88508	575291	157	0	0	88665	27617	0	0	0	1667	0	0	59382	3308.9	
90	SK	XER	7.251	208297	2872801	27898	2969	0	233226	35865	0	0	0	847	1056	-3	185221	2902.7	
91	SK	KAZ	7.553	400740	5305877	131717	9030	0	523427	420094	0	0	0	0	0	0	103333	3308.9	
92	SK	KGZ	7.854	105579	1344242	440	1826	-167	104193	75248	0	0	0	9000	0	0	19945	3308.9	
93	SK	XSU	1.771	159984	9032067	6393	0	0	166544	90111	0	0	0	16433	0	0	60000	3308.9	

Table A-4-19. Launching pad data of butter and ghee in 2010.

CNO	PID	CID	YBT	QBT	QDMK	IMBT	EXBT	STCBT	QDBT	QDLBT	QDSBT	QDWBT	QDPBT	QDOBt	QDXBT	QDFBT	PBT	
Country No.	Prod. code	Country code	Prod. Rate %	Production t	Raw milk supply t	Imports t	Exports t	Stock change. t	Total Supply t	Feed demand t	Seed demand t	Loss t	Processing demand t	Other demand t	Error t	Food demand t	Price USD ^{t-1}	
1	BT	AUS	1.700	137691	8098703	18215	58974	-7333	104265	0	0	0	0	17504	0	86762	3543.5	
2	BT	NZL	4.055	421333	10390886	740	382578	-1333	40829	0	0	0	0	0	0	0	40829	3499.1
3	BT	XOC	1.441	1910	132550	5511	103	0	7318	0	0	0	0	1429	0	5889	3499.1	
4	BT	CHN	0.249	106433	42804732	29190	2815	0	132808	0	0	0	0	0	0	132808	4977.0	
5	BT	HKG	0.000	0	447628	8713	1106	0	7607	0	0	0	0	174	0	7433	4977.0	
6	BT	JPN	0.934	72488	7757862	6903	38	0	79353	0	0	0	0	642	0	79353	12659.4	
7	BT	KOR	2.766	57480	2078391	6689	0	0	64169	0	0	0	0	0	0	63528	12659.4	
8	BT	MNG	0.167	650	388547	105	0	0	755	0	0	0	0	0	0	755	3499.1	
9	BT	TWN	0.002	14	587035	15957	41	0	15930	0	0	0	0	114	0	15816	3499.1	
10	BT	XEA	0.000	0	132648	710	0	0	710	0	0	0	0	23	0	687	12659.4	
11	BT	BRN	0.000	0	19742	466	0	0	466	0	0	0	0	0	0	466	3499.1	
12	BT	KHM	0.000	0	39473	134	0	0	134	0	0	0	0	0	0	134	3499.1	
13	BT	IDN	0.000	0	1589132	14252	1083	0	13168	0	0	0	0	0	0	13168	3499.1	
14	BT	LAO	0.000	0	17405	142	0	0	142	0	0	0	0	0	0	142	3499.1	
15	BT	MYS	0.000	0	156684	12298	3629	0	8669	0	0	0	0	12	0	8657	3499.1	
16	BT	PHL	0.000	0	121510	19874	25	0	19849	0	0	0	0	0	0	19849	3499.1	
17	BT	SGP	0.000	0	0	0	0	0	0	0	0	0	0	0	0	0	3499.1	
18	BT	THA	0.000	0	1020594	9805	375	0	9430	0	0	0	0	0	0	9430	3499.1	
19	BT	VNM	0.000	0	564990	12899	0	0	12899	0	0	0	0	0	0	12899	3499.1	
20	BT	XSE	1.703	28314	1662350	504	0	0	28818	0	0	0	0	0	0	28818	3499.1	
21	BT	BGD	0.688	24927	3622951	3671	8	0	28589	0	0	0	0	0	0	28589	3499.1	
22	BT	IND	2.729	3331717	122079008	12778	8290	0	3336205	0	0	0	0	0	0	3336205	3499.1	
23	BT	NPL	1.495	23970	1603285	705	538	0	24137	0	0	0	0	0	0	24137	3499.1	
24	BT	PAK	1.833	650217	35480116	117	414	0	649920	0	0	0	0	0	0	649920	3499.1	
25	BT	LKA	0.085	613	721849	762	9	0	1366	0	0	0	0	0	0	1366	3499.1	
26	BT	XSA	1.862	33133	1779201	796	0	0	33929	0	0	0	0	0	0	33929	3499.1	
27	BT	CAN	1.011	84152	8325583	9266	3342	-2233	92309	0	0	0	0	0	0	92309	6791.9	
28	BT	USA	0.860	750355	87233784	20479	50492	0	720342	0	0	83969	0	0	0	636374	3572.5	
29	BT	MEX	0.177	20062	11331279	43108	130	0	63040	0	0	0	0	0	0	63040	3341.8	
30	BT	XNA	0.000	0	1580	200	0	-23	223	0	0	0	0	31	0	192	3572.5	
31	BT	ARG	0.618	56610	9160249	612	19414	0	37808	0	0	0	0	0	0	37808	4208.6	
32	BT	BOL	0.227	1032	454546	68	782	0	318	0	0	0	0	0	0	318	2751.1	
33	BT	BRA	0.293	91000	31070135	3465	2786	0	91679	155	0	0	0	0	0	91524	2751.1	
34	BT	CHL	0.855	19951	2332777	1102	2553	0	18501	0	0	0	0	0	0	18501	4208.6	
35	BT	COL	0.324	20400	6294535	32	137	0	20295	0	0	0	0	0	0	20295	2751.1	
36	BT	ECU	0.093	2027	2180599	59	0	0	63040	0	0	0	0	0	0	63040	3341.8	
37	BT	PRY	0.077	387	499715	60	119	0	328	0	0	0	0	27	0	2058	2751.1	
38	BT	PER	0.199	3293	1652060	4304	6	0	7591	0	0	0	0	0	0	4817	4208.6	
39	BT	URY	1.310	19806	1512035	91	14569	667	4662	0	0	0	0	0	0	4662	4208.6	
40	BT	VEN	0.032	1267	3976377	2186	0	0	3453	0	0	0	0	0	0	3453	2751.1	
41	BT	XSM	0.044	31	70206	276	61	0	246	0	0	0	0	0	-7	253	2751.1	
42	BT	CRI	0.790	6733	852832	146	827	0	6053	0	0	0	0	0	0	6056	3341.8	
43	BT	GTM	0.229	1409	614234	2118	66	0	3461	0	0	197	0	0	0	3264	3341.8	
44	BT	HND	0.979	6917	706607	868	1452	0	6333	0	0	0	0	0	0	6333	3341.8	
45	BT	NIC	0.088	607	686528	351	57	0	901	0	0	0	0	0	0	901	3341.8	
46	BT	PAN	0.022	47	211139	2108	0	0	2156	0	0	0	0	0	0	2156	3341.8	

Table A-4-19. Launching pad data of butter and ghee in 2010 (continued).

CNO	PID	CID	YBT	QBT	QDMK	IMBT	EXBT	STCBT	QDBT	QDLBT	QDSBT	QDWBT	QDPBT	QDOBt	QDXBT	QDFBT	PBT	
Country No.	Prod. code	Country code	Prod. Rate %	Production t	Raw milk supply t	Imports t	Exports t	Stock change t	Total Supply t	Feed demand t	Seed demand t	Loss t	Processing demand t	Other demand t	Error t	Food demand t	Price USD ^{t-1}	
47	BT	SLV	0.037	210	571412	417	7	0	620	0	0	0	0	0	0	620	3341.8	
48	BT	XCA	0.000	0	12837	74	0	0	74	0	0	0	0	0	0	74	3341.8	
49	BT	DOM	0.344	1869	543420	1015	0	0	2884	0	0	0	0	0	0	2884	3341.8	
50	BT	JAM	0.000	0	199244	1663	1	0	1662	594	0	0	0	0	0	1069	3341.8	
51	BT	PRI	0.000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3341.8
52	BT	TTO	0.000	0	54036	743	21	0	722	0	0	0	0	0	0	722	3341.8	
53	BT	XCB	0.107	1407	1316201	3946	43	-83	5393	0	0	0	0	243	0	5150	3341.8	
54	BT	AUT	1.269	33659	2653301	14362	2349	0	45672	0	0	0	0	0	0	45672	4350.3	
55	BT	BEL	2.785	86394	3102293	114103	128280	0	72217	0	0	0	0	6616	0	65600	4350.3	
56	BT	CYP	0.000	0	203754	1265	30	0	1235	0	0	0	0	105	0	1131	4350.3	
57	BT	CZE	1.871	39824	2128107	19427	9150	-1072	50101	0	0	0	0	0	0	50101	4350.3	
58	BT	DNK	0.914	36133	3953352	37963	55769	0	19400	0	0	0	0	8667	0	10733	4350.3	
59	BT	EST	1.117	6833	611487	534	4228	0	3139	0	0	0	0	0	0	3139	4350.3	
60	BT	FIN	2.439	53595	2197509	2222	30507	0	25310	0	0	0	0	0	0	25310	4350.3	
61	BT	FRA	1.784	400367	2244060	152884	76914	0	476337	0	0	0	0	0	0	476337	4350.3	
62	BT	DEU	1.461	412776	28253919	130991	103894	0	439873	0	0	0	0	0	0	439873	4350.3	
63	BT	GRC	0.055	1333	2442075	10376	113	0	11596	0	0	0	0	117	0	11479	4350.3	
64	BT	HUN	0.255	4335	1700233	5290	1133	-12140	8493	0	0	0	0	659	0	7833	4350.3	
65	BT	IRL	2.584	133767	5176164	7422	139409	0	13920	0	0	0	0	0	0	13920	4350.3	
66	BT	ITA	0.797	105729	13273833	61079	15449	9692	141667	0	0	0	0	0	0	141667	4350.3	
67	BT	LVA	0.736	4863	660666	1884	2569	0	4178	0	0	0	0	0	0	4178	4350.3	
68	BT	LTU	0.551	9750	1770921	720	3731	0	6739	0	0	0	0	0	0	6739	4350.3	
69	BT	LUX	0.165	199	121117	3278	2448	0	1029	0	0	0	0	0	0	1029	4350.3	
70	BT	MLT	0.000	0	52239	468	2	0	467	0	0	0	0	47	0	420	4350.3	
71	BT	NLD	1.113	126529	11370259	62213	178780	-11667	21629	0	0	0	0	0	0	21629	4350.3	
72	BT	POL	1.417	172788	12190403	12545	26118	0	159215	0	0	0	0	1215	0	158000	4350.3	
73	BT	PRT	1.364	28029	2054377	9463	16388	0	21104	0	0	0	0	0	0	21104	4350.3	
74	BT	SVK	0.723	6424	889122	8820	2022	0	13222	0	0	0	0	0	0	13222	4350.3	
75	BT	SVN	1.161	5600	482275	1039	727	0	5912	0	0	0	0	0	0	5912	4350.3	
76	BT	ESP	0.463	38900	8404530	16960	24406	-5000	36454	0	0	0	0	0	0	36454	4350.3	
77	BT	SWE	1.213	34843	2871380	12038	13396	0	33485	0	0	0	0	0	0	33485	4350.3	
78	BT	GBR	0.890	122667	13779258	100453	29693	0	193427	0	0	0	0	0	0	193427	4350.3	
79	BT	CHE	1.180	48486	4108547	206	5961	-646	43377	0	0	0	0	0	0	43377	4350.3	
80	BT	NOR	0.993	15600	1570937	861	2054	0	14407	0	0	0	0	0	0	14407	4350.3	
81	BT	XEF	1.621	2000	123395	0	524	0	1476	0	0	0	0	0	0	1476	4350.3	
82	BT	ALB	0.279	3027	1083222	161	0	0	3188	0	0	0	0	0	0	3188	4350.3	
83	BT	BGR	0.082	1123	1366309	3672	2186	0	2610	0	0	0	0	0	0	2610	4350.3	
84	BT	BLR	1.805	106313	5889786	202	69183	0	37332	0	0	0	0	0	0	37332	4695.5	
85	BT	HRV	0.588	5068	862199	1090	1237	0	4921	0	0	0	0	0	0	4921	4350.3	
86	BT	ROU	0.152	8300	5445593	6099	285	0	14114	0	0	72	0	0	0	14042	4350.3	
87	BT	RUS	0.688	220289	32004503	72233	2915	0	289608	0	0	0	0	0	0	289608	4695.5	
88	BT	UKR	0.682	76988	11288475	8582	1325	0	84245	0	0	0	0	0	0	84245	4695.5	
89	BT	XEE	0.674	3954	586616	343	373	0	3924	0	0	0	0	0	-46	3971	4695.5	
90	BT	XER	0.331	9559	2890767	4754	1469	0	12843	0	0	0	0	0	0	12843	4350.3	
91	BT	KAZ	0.267	14639	5478846	7325	22	0	21942	0	0	0	0	0	0	21942	4695.5	
92	BT	KGZ	0.434	5743	1323424	806	851	0	5698	108	0	0	0	3000	0	2591	4695.5	
93	BT	XSU	0.084	7585	9039339	4057	0	0	11642	0	0	0	0	0	0	11642	4695.5	

Table A-4-20. Launching pad data of cheese in 2010.

CNO	PID	CID	YCH	QCH	QDMK	IMCH	EXCH	STCCH	QDCH	QDLCH	QDSCCH	QDWCH	QDPCH	QDOCH	QDXCH	QDFCH	PCH
Country No.	Prod. code	Country code	Prod. Rate	Production	Raw milk supply	Imports	Exports	Stock change.	Total Supply	Feed demand	Seed demand	Loss	Processing demand	Other demand	Error	Food demand	Price
			%	t	t	t	t	t	t	t	t	t	t	t	t	t	USDt ⁻¹
1	CH	AUS	4.239	343322	8098703	69385	158456	0	254452	0	0	0	0	0	0	254452	4074.7
2	CH	NZL	2.714	282000	10390886	4927	252581	7667	26679	0	0	0	0	0	0	26679	3994.4
3	CH	XOC	0.000	0	132550	4154	8	0	4146	0	0	0	0	522	0	3625	3994.4
4	CH	CHN	0.640	273850	42804732	22833	216	0	296467	0	0	0	0	0	0	296467	4928.8
5	CH	HKG	0.000	0	447628	14032	1995	0	12037	0	0	0	0	425	0	11611	4928.8
6	CH	JPN	1.626	126141	7757862	197612	219	0	323534	0	0	0	0	0	0	323534	4879.5
7	CH	KOR	0.000	0	2078391	60884	89	0	60796	0	0	0	0	0	0	60796	6876.0
8	CH	MNG	0.478	1858	388547	509	0	0	2367	0	0	0	0	0	0	2367	4928.8
9	CH	TWN	0.000	0	587035	18281	24	0	18258	0	0	0	0	0	0	18258	4928.8
10	CH	XEA	0.000	0	132648	474	0	0	474	0	0	0	0	0	0	474	6876.0
11	CH	BRN	0.000	0	19742	432	0	0	432	0	0	0	0	0	0	432	4928.8
12	CH	KHM	0.000	0	39473	144	0	0	144	0	0	0	0	0	0	144	4928.8
13	CH	IDN	0.000	0	1589132	14139	504	0	13635	0	0	0	0	0	0	13635	4928.8
14	CH	LAO	0.000	0	17405	8	0	0	8	0	0	0	0	0	0	8	4928.8
15	CH	MYS	0.000	0	156684	10207	211	0	9995	0	0	0	0	0	0	9995	4928.8
16	CH	PHL	0.000	0	121510	14350	649	0	13701	0	0	0	0	0	-1	13702	4928.8
17	CH	SGP	0.000	0	0	0	0	0	0	0	0	0	0	0	0	0	4928.8
18	CH	THA	0.459	4680	1020594	5995	110	0	10565	0	0	0	0	0	0	10565	4928.8
19	CH	VNM	0.000	0	564990	4613	0	0	4612	0	0	0	0	0	0	4612	4928.8
20	CH	XSE	4.854	80696	1662350	198	0	0	80893	0	0	0	0	0	0	80893	4928.8
21	CH	BGD	0.028	1000	3622951	370	0	0	1370	0	0	0	0	0	0	1370	4928.8
22	CH	IND	0.001	1500	122079008	810	1649	0	661	0	0	0	0	0	0	661	4928.8
23	CH	NPL	0.000	0	1603285	150	0	0	149	0	0	0	0	0	0	149	4928.8
24	CH	PAK	0.000	0	35480116	1054	1	0	1053	0	0	0	0	0	0	1053	4928.8
25	CH	LKA	0.000	0	721849	1100	5	0	1095	0	0	0	0	0	0	1095	4928.8
26	CH	XSA	1.267	22550	1779201	664	0	0	23214	0	0	0	0	565	0	22650	4928.8
27	CH	CAN	4.893	407330	8325583	24280	9484	-11000	433126	0	0	0	0	0	-780	433906	6881.8
28	CH	USA	5.801	5060222	87233784	147981	170371	-23333	5061165	0	0	0	0	300000	0	4761165	3413.0
29	CH	MEX	1.354	153422	11331279	76959	4602	-119	225898	0	0	0	0	0	0	225898	3593.2
30	CH	XNA	0.000	0	1580	606	0	-83	689	0	0	0	0	138	0	551	3413.0
31	CH	ARG	5.692	521446	9160249	3121	51416	0	473150	0	0	0	0	0	0	473150	4394.3
32	CH	BOL	2.226	10116	454546	538	0	0	10654	0	0	0	0	0	0	10654	2829.6
33	CH	BRA	0.145	44947	31070135	25565	4390	0	66122	0	0	0	0	0	0	66122	2829.6
34	CH	CHL	2.978	69465	2332777	9512	10114	0	68864	0	0	0	0	0	0	68864	4394.3
35	CH	COL	0.921	58000	6294535	583	1433	0	57150	0	0	0	0	0	-659	57809	2829.6
36	CH	ECU	3.902	85078	2180599	359	87	0	85350	0	0	0	0	0	0	85350	2829.6
37	CH	PRY	0.000	0	499715	1298	266	0	1031	0	0	0	0	0	0	1031	4394.3
38	CH	PER	1.190	19657	1652060	2473	32	0	22098	0	0	0	0	0	0	22098	2829.6
39	CH	URY	5.135	77642	1512035	843	40731	5667	32087	0	0	0	0	0	0	32087	4394.3
40	CH	VEN	5.366	213382	3976377	21933	80	0	235235	0	0	704	0	0	-404	234935	2829.6
41	CH	XSM	0.000	0	70206	1913	17	0	1895	0	0	44	0	0	0	1852	2829.6
42	CH	CRI	1.426	12160	852832	1966	1983	0	12143	0	0	0	0	0	0	12143	3593.2
43	CH	GTM	2.221	13640	614234	9833	393	0	23080	0	0	0	0	0	0	23080	3593.2
44	CH	HND	1.977	13973	706607	6722	3527	0	17168	0	0	0	0	0	0	17168	3593.2
45	CH	NIC	5.138	35272	686528	646	25665	0	10253	0	0	0	0	0	-6421	16673	3593.2
46	CH	PAN	6.350	13407	211139	6305	1245	0	18467	0	0	0	0	0	0	18467	3593.2

Table A-4-20. Launching pad data of cheese in 2010 (continued).

CNO	PID	CID	YCH	QCH	QDMK	IMCH	EXCH	STCCH	QDCH	QDLCH	QDSCCH	QDWCH	QDPCCH	QDOCH	QDXCH	QDFCH	PCH
Country No.	Prod. code	Country code	Prod. Rate %	Production	Raw milk supply	Imports	Exports	Stock change.	Total Supply	Feed demand	Seed demand	Loss	Processing demand	Other demand	Error	Food demand	Price
				t	t	t	t	t	t	t	t	t	t	t	t	t	USD/t
47	CH	SLV	0.526	3008	571412	23167	1497	0	24678	0	0	0	0	0	0	24678	3593.2
48	CH	XCA	0.000	0	12837	825	18	0	807	0	0	0	0	0	0	807	3593.2
49	CH	DOM	0.742	4033	543420	5774	199	0	9609	0	0	0	0	0	0	9609	3593.2
50	CH	IAM	0.000	0	199244	3546	610	0	2935	0	0	0	0	0	0	2935	3593.2
51	CH	PRI	0.000	0	0	0	0	0	0	0	0	0	0	0	0	0	3593.2
52	CH	TTO	0.000	0	54036	7174	139	0	7035	0	0	0	0	0	0	7035	3593.2
53	CH	XCB	1.095	14413	1316201	16022	0	197	30239	0	0	0	0	2526	0	27713	31959.8
54	CH	AUT	7.321	194244	2653301	87521	99920	0	181875	0	0	0	0	0	0	181875	3870.4
55	CH	BEL	2.344	72711	3102293	263594	148050	-83.33	196588	0	0	0	0	0	-15955	212543	3870.4
56	CH	CYP	2.546	5187	203754	9513	7948	0	6752	0	0	0	0	1300	0	5452	3870.4
57	CH	CZE	6.017	128039	2128107	73964	28731	0	173272	0	0	0	0	0	0	173272	3870.4
58	CH	DNK	7.486	295967	3953352	73396	261496	40	107827	0	0	0	0	0	0	107827	3870.4
59	CH	EST	3.723	22767	611487	3451	16685	0	9533	0	0	0	0	0	0	9533	3870.4
60	CH	FIN	4.659	102390	2197509	47536	49490	0	100435	0	0	0	0	0	0	100435	3870.4
61	CH	FRA	8.444	1895086	22444060	278390	632724	0	1540752	0	0	0	0	0	0	1540752	3870.4
62	CH	DEU	7.528	2126980	28253919	617264	1004140	0	1740105	0	0	0	0	0	0	1740105	3870.4
63	CH	GRC	8.937	218253	2442075	121501	44493	1667	293595	0	0	0	0	5995	0	287600	3870.4
64	CH	HUN	5.234	88989	1700233	36547	12614	1381	11541	0	0	2098	0	0	-1	109444	3870.4
65	CH	IRL	3.384	175183	5176164	48281	171955	-1667	53175	0	0	0	0	0	-5453	58628	3870.4
66	CH	ITA	9.238	1226235	13273833	458773	266697	-33	1418344	0	0	0	0	0	1	1418343	3870.4
67	CH	LVA	4.445	29366	660666	14407	12457	0	31315	0	0	0	0	0	0	31315	3870.4
68	CH	LTU	6.311	111767	1770921	6209	72083	7333	38559	0	0	0	0	0	0	38559	3870.4
69	CH	LUX	0.000	0	121117	44464	38196	-667	6935	0	0	0	0	0	0	6935	3870.4
70	CH	MLT	0.324	169	52239	5355	37	0	5487	0	0	0	0	473	0	5014	3870.4
71	CH	NLD	6.492	738137	11370259	212521	646888	0	303771	0	0	0	0	0	-2613	306383	3870.4
72	CH	POL	5.408	659245	12190403	43849	144729	13333	545031	0	0	0	0	0	0	545031	3870.4
73	CH	PRT	3.467	71234	2054377	35384	6495	0	100124	0	0	0	0	3753	0	96371	3870.4
74	CH	SVK	5.876	52248	889122	50038	42957	0	59329	0	0	0	0	0	0	59329	3870.4
75	CH	SVN	3.855	18594	482275	14210	4091	0	28712	0	0	0	0	0	0	28713	3870.4
76	CH	ESP	2.645	222314	8404530	245935	14673	6667	415110	0	0	0	0	0	0	415110	3870.4
77	CH	SWE	3.785	108680	2871380	84429	4832	0	178276	0	0	0	0	0	0	178277	3870.4
78	CH	GBR	2.717	374367	13779258	410528	107834	-123	677183	0	0	0	0	0	0	677183	3870.4
79	CH	CHE	4.890	200897	4108547	43345	55536	52	188653	0	0	0	0	32000	0	156653	3870.4
80	CH	NOR	4.829	75867	1570937	9654	13631	0	71890	0	0	0	0	0	0	71890	3870.4
81	CH	XEF	6.613	8160	123395	122	245	0	8038	78	0	0	0	0	0	7960	3870.4
82	CH	ALB	1.465	15867	1083222	1352	2	0	17217	0	0	0	0	0	0	17217	3870.4
83	CH	BGR	5.705	77946	1366309	8159	22036	0	64070	0	0	0	0	0	-2	64072	3870.4
84	CH	BLR	2.585	152276	5889786	3086	120704	0	34657	0	0	0	0	0	0	34657	5459.3
85	CH	HRV	3.449	29733	862199	11591	1981	76	39267	0	0	0	0	0	0	39267	3870.4
86	CH	ROU	1.562	85080	5445593	29466	3038	0	111508	0	0	561	0	0	0	110947	3870.4
87	CH	RUS	1.895	606535	32004503	387400	16731	0	977205	0	0	0	0	0	0	977205	5459.3
88	CH	UKR	2.012	227082	11288475	9807	74070	0	162820	0	0	0	0	0	0	162820	5459.3
89	CH	XEE	1.252	7347	586616	2585	329	0	9603	0	0	0	0	0	0	9603	5459.3
90	CH	XER	1.475	42642	2890767	16072	6350	-3.33	52698	0	0	0	0	0	0	52698	3870.4
91	CH	KAZ	0.313	17143	5478846	21576	928	0	37791	0	0	0	0	0	0	37791	5459.3
92	CH	KGZ	0.314	4157	1323424	540	1938	0	2760	0	0	0	0	0	0	2760	5459.3
93	CH	XSU	0.395	35678	9039339	1553	0	0	37231	0	0	0	0	0	0	37231	5459.3

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