



Impact of WTO policies on agricultural production: effects of subsidies (with reference to south East Asian countries)

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ABSTRACT

Agriculture remains the main source of livelihood for more than 2.6 billion people in the world; the majority of them are located in developing countries. Rising incomes, urbanization and shifting consumption patterns have increased agricultural production in most areas of the world. However, despite fabulous increase in agricultural production per capita in every country of world, major distributional inequalities in access of agro-based food are already persisting. At the same time, according to the millennium ecosystem assessment predicts that prospect of providing sufficient agro-based food to sustain another 2 billion people by 2020 to food secure if the productivity of agricultural production systems cannot keep pace with this demand. As these systems are under increasing pressure to meet the growing need for food, so it is also vital that the environmental challenges associated with agricultural production are addressing effectively to combat water pollution, pesticide use, land degradation and greenhouse gas emissions etc.

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Introduction

It is widely recognized that government policies are significant drivers of agricultural production and food consumption patterns, both locally and globally. Massive production and export subsidies, notably in the EU and US, continue to stimulate over-production, while imports of sensitive food products remain heavily protected through tariff and non-tariff measures. Such policies have in turn undermined developing country's ability to promote rural development, develop their export sectors and to protect their vulnerable rural populations from unfair competition. While budgetary concerns, political controversy and demands from trading partners have initiated a move away from the most damaging types of subsidies, a significant proportion of developed country spending remains linked to agricultural farm production levels.

The reform of the global agriculture trading system initiated during the Uruguay Round with the objective of establishing a "fair and market oriented trading system" plays a major role in this process. Developed countries would be allowed to retain subsidies that deliver various kinds of public goods in exchange for bringing agriculture within the WTO system and committing to future reductions of trade-distorting support. At the same time, critics have argued that the current green box criteria essentially address developed country concerns and do not accommodate interests of developing countries. Developing countries have called the rules on green box subsidies to be changed so as to minimize effects on production, and to ensure that their own current and future needs of agricultural production are properly covered.

If agricultural policy is indeed to be transformed so that it truly promotes equity, food security and sustainable livelihoods, a wider community of stakeholders needs to be involved in the policy formulation process in both developed and developing countries. The Asian economy has experienced a major impact

on various unilateral economic reforms undertaken since 1991; the economy has to reorient itself to the changing multilateral trade discipline within the WTO agenda. The independent trade policy measures have encompassed exchange-rate policy, foreign investment, external borrowings, import licensing, custom tariffs and export subsidies with reference to agriculture. The nature of South East Asian country subsidy policy for agricultural production under the various agreements of WTO negotiations has major impacts on their economies. The purpose of this study is to analyze the impact of WTO subsidy policies on the agricultural production, economic welfare, trade, allocation of agricultural resources in South-East Asian countries. The study deals with the experience of South-East Asian countries during the 1995-2009 with regard to liberalization moves as well as changes induced through multilateral trade negotiations. It presents an analysis of the impact on these countries various round of WTO negotiations. Since the effect of agriculture subsidies in developed countries is that their farm production levels are kept high and their producers dispose of their surplus in other countries, by way of dumping on world markets often less than the production cost. Therefore farmers in developing countries incur losses in three ways:

(a) Developing Countries lose export opportunities and revenues from having their market due to entry blocked in the developed countries using these subsidies.

(b) Developing Countries lose export opportunities in third world countries, because the subsidizing developed country is exporting to these countries at artificially low prices of agricultural products.

(c) Developing Countries lose their market share in their own domestic market, or even lose their livelihoods due to the inflow of artificially cheap subsidized imports. Agricultural subsidy policies of developed countries have significant effect on agricultural production of all developing countries.

Agricultural protectionism and subsidies in developed countries have compelled developing countries becoming net food importers. It focuses preferences of number of developing countries that have special market access arrangements with industrialized developed countries. For low-income developing countries which produce a large percentage of agricultural exports attain benefits in long period of time. It has also become bone of contention that agro-food security could decrease if cash crops or export production displaces traditional crops. The WTO Agreement on Agriculture which came into effect in 1995 brought world agriculture production under multilateral trade rules. This Agreement contains several types of imbalances that are favorable to developed countries and unfavorable to developing countries. The WTO Agreement on Agriculture has permitted the developed countries to increase their domestic subsidies substantially continuing with their export subsidies and provide special protection to their farmers in times of increased imports and diminished domestic prices. The developing countries, on the other hand, cannot use domestic subsidies beyond a particular level, like export subsidies and the special protection measures for their farmers.

Review of Literature

Subsidy policies require huge governmental investment to farmers for providing price supports and input subsidy in terms of seed, fertilizer, agrochemicals etc. Input subsidies require major allocation decisions and compromise on scarce government resources that could be used for directly productive investments. Study conducted by M.A.Rehman. et.al. in 1998 states that agricultural protection also represents an inefficient transfer of income from consumers and taxpayers to farmers, In addition, price policies based upon subsidy policy have significantly influenced agricultural production. Despite the high costs of either subsidy or protecting agriculture followed by increasing agricultural production, has been adopted by most countries including developing as well as developed countries.

The following are some examples of the effects of developed-country subsidies. In 2000, the world price of wheat was £73 a tonne, the production cost of UK wheat was £113 a tonne, and the UK wheat price was £70 a tonne. Thus the selling price in the UK was £43 below the production cost. How could the UK farmer sell below the production cost? Because of a massive subsidy paid by the government in the form of direct payments, e.g. subsidy on each acre of wheat to compensate for reducing the previous system of price support (£226 per hectare in 2001) and subsidy for year 2009 was £428 per hectare. In 2000, £458 million was paid for 2 million hectares of wheat and another £127 million for 550,000 hectares of paddy. (Chadha Rajesh, Sanjib Pohit 2007)

Previously the system of support of government is to subsidize through price intervention, i.e. to buy from the farmers at a price higher than the world market price. So these contributions to their farmers make them able to stay in world market. In the period 1992 to 1999, the intervention price fell, and thus the EU wheat price has fallen in ten years minimum, so the EU wheat price is similar to the world price. But there has instead been an increase in direct payments. Farmers get their extra revenue not in the form of being paid an artificially high price through direct payments. The effect is the same, i.e. the farmers get a revenue higher than if there were no subsidy, and Developing Countries remain economically viable, even though the price they have been paid is far below the cost of production.(Brown, Drusilla K., Alan V. Deardorff, Alan Fox,

Robert M. Stern 2006). Moreover this shift from price-support subsidy (direct payment) enables the UK or European farmers to have a price similar to (or even below) the world price, and thus they are able to sell in the world market at an artificially low price, without needing an export subsidy. The situation of South East Asian small farmers is not experiencing the prosperity promised by the agreement's proponents of WTO agreement on agriculture. These become empty promises, and for millions of small farmers and peasants the result has been the entrenchment of poverty, destruction of livelihoods, increased burden and empty stomachs. Agricultural subsidization has been debilitated small farmers and impoverished the poor. The study examined cases in Thailand, Philippines, Indonesia, Malaysia, Laos, Brunei, Cambodia, Myanmar, Singapore, Vietnam and their comparative analysis with India focusing on a single crop important to that country. In Thailand, small soybean and cassava farmers have come under heavy pressure from cheap imports of soybean and export barriers to cassava in Western markets. So their farmers are forced to work harder in efforts to increase production (Joshi, Vijay and I.M.D.Little 1994). In Indonesia, farming credits have been planned as a safety net to help those affected by falling paddy prices but the implementation is ineffective. ASEAN farmers facing falling prices and rising costs, stagnating farm incomes, so farmers have to take up additional work or migrate like in most of villages in India, a shift from traditional food to cash crops led to higher food prices, fewer employment opportunities, lower income and less food consumption among marginal farmers. In ASEAN countries privatization policies have increased the cost of agricultural production, leaving more people without land. (Vaidyanathan A. 1996). According to one study of (Francois, Joseph and Anna Strutt.1999) about potato farmers; chili and onion producers in Sri Lanka have been complaining about the influx of cheap imports from Holland. So local farmers are unable to produce food cheaper than their foreign counterparts and are demanding protection through higher import duties, lower local taxes and reduced tariffs on imported inputs required in agricultural production.

Since the 1970s various studies conducted by (Hoekman, Bernard.1995), (McDougall, Robert1998) have tried to measure the impact of agricultural subsidization of industrialized countries on the developing countries. These studies have consistently reported that agricultural production surpluses generated through protection and subsidies in developed countries which are often dumped into developing countries markets have severely hurt agricultural development of these countries. It shows that these policies of developed countries have displaced about US\$20 billion in net agricultural exports per year from developing countries and reduced agricultural incomes in those countries by nearly US\$15 billion from agricultural products. More than 50% of these effects have resulted from the policies of the WTO for European Union and other European countries such as Norway and Switzerland, 30% from U.S. policies, and about 10 percent mainly from Japanese policies, rest 10% from the policies of other industrialized countries (Brown, Drusilla K.,Robert M.Stern1999). These results of developed countries which are protecting agriculture through subsidy policies have additional benefits for their societies. These losses resulting from the displaced production are particularly damaging in the many developing countries whose economies depend heavily on agriculture and agro based industrial production.

Yet several studies (Mehta, Rajesh. 1998), (Pursell, Gary. 1996) have shown that the Green Revolution and domestic and commercialization policies can yield benefits for the developing countries because of its effect on production, employment, and food prices. Generally, developing countries need to pursue complementary policies that perform efficiently. (Mishra, S. N. and Ramesh Chand 1995).

The empirical evidence from a number of studies indicates a strong and significant effect of WTO policies on growth of developing countries. According to study (Stern, Robert M., Drusilla K. Brown, Dilip K. Das 2000) eliminating special and differential treatment from a realistic liberalization scenario of WTO will increase the benefit to high-income countries by 21 percent, to middle-income countries by 37 percent, and to low-income countries by 64 percent however distribution among countries due to economic benefits from agricultural trade liberalization is also significant. However, several studies generally agree that all developed countries would benefit and that most of developing countries including India, ASEAN countries would gain as well. Countries whose agricultural sectors are likely to benefit most from liberalization include Australia, New Zealand, Canada, Brazil, and Argentina. However the study (Francois, Joshep and Anna Strut. 1999) would show the Agreement on Agriculture enable developed countries to continue high levels of protection, even as many developing countries have liberalized and providing subsidy to their farmers.

On the basis of review of various studies it seems that the study about agricultural subsidy policies plays an important role in development of agricultural sector of any country as well as it decides the future of agricultural investment required by that particular country. So objectives of our study are as follows:

Objectives

1. To study agricultural production trends of South East Asian countries.
2. To identify linkages between WTO subsidy policies & agricultural production of South East Asian Countries.
3. To measure the impact of WTO subsidy policy on agricultural production.
4. To suggest the changes (if required) in subsidy policies concerning to agricultural sector development of South East Asian Countries.

Scope of Study

World Trade Organization's Agreement on Agriculture (AoA) creates problem to the developing countries. It examines domestic support provided by developing as well as developed countries into input subsidies which enable the farmers to sell their products at lower prices. The subsidy available to developing countries is limited into mainly four items like input subsidy (fertilizer, seed, electricity, water) given to poor farmers; land improvement subsidy; production of fuel crops; and provision of food subsidy to the poor. So that scope is very vast and most of the developing countries including South East Asian Countries use these subsidies. Further subsidies availed by developed countries are of different types and it is also promulgated by WTO. These Countries are using non-tariff measures or quantitative limits on imports and providing benefit of the "special safeguard" provision of WTO subsidy policies which enable them to protect their farmers in any adverse situation. The result is that developed countries have been given much liberty to protect their farmers in comparison to developing countries farmers so it indirectly effects agricultural

production. WTO Agreement on Agriculture is based on the assumption that production and trade in this sector should be conducted on a commercial basis. But agriculture in most of the developing countries is not a commercial operation; instead it is carried out largely on small farms as well as household farmers. Most farmers take to agriculture not because it is commercially viable, but because the land has been in possession of the family for generations and there is no other source of livelihood. If such farmers are asked to face international competition, they would certainly lose out. This will result in large-scale unemployment and collapse of the economy mainly based on agriculture in a large number of developing countries as well as ASEAN countries. The historical rise in levels of agricultural protection in industrializing countries is linked to the changing role of agriculture during economic growth. But the subsidy policy of agricultural protection has also ending with increasing consumerism in agriculture. Declining trends in relative size of the agricultural sector requires special support. Farmers increase their effectiveness in production but they are not able to achieve minimum living standards. In addition, there is a tendency of recent developed economies to lose their comparative advantage in agriculture and become net food importers. Therefore these types of developments provide greater scope for protecting farmers through subsidy policy of WTO (Lindert 2001; Anderson and Hayami 1996). Due to importance of this situation all WTO member countries have to abolish quantitative restrictions and non-tariff barriers in agricultural sector and replace them with reducing tariff level.

From the above discussion it is evident that such type of research is very essential to ensure the development of agricultural sector after induction of WTO subsidy policy. Therefore it indirectly effects the situation of agricultural production of developing ASEAN countries as well as their farmer's living standards.

Hypotheses

Hypotheses are statements in which we assign variables to cases. The hypotheses that your prediction supports the alternative hypotheses and we call hypotheses that describe the remaining possible outcomes the null hypotheses.

In this study we use a notation like HA to represent the alternative hypotheses and HO to represent the null case.

HA=Alternative Hypotheses

HO=Null Hypotheses

The Null Hypotheses for this study is:

HO: As a result induction of subsidies through WTO policies will either be no significant difference in agricultural production of South East Asian Countries or there will be a significant increase.

This is tested against the Alternative Hypotheses:

HA: As a result induction of subsidies through WTO policies there will be significant decrease in agricultural production of South East Asian Countries.

Research Methodology

Basically research will be based on secondary data and if needed primary data may be collected with the help of questionnaire and for that respondents may be experts in the field of WTO policies especially in field of agriculture. Secondary data will be collected from various published sources, journals. Secondary data are also collected through online research and publications of various types, while primary data are also collected from Service Agencies. The time-series data of agriculture subsidy for South East Asian Countries vis-a-vis

world are obtained from World Economic Reports, Asian Economic Survey (various issues). The collected data are tabulated, analyzed and interpreted in the light of the specific objective of the present study by the different statistical techniques.

Data Analysis

The data analysis will be done on the basis of following propositions. The intention is to justify the role of subsidy in agricultural production. This data analysis would support the objective of the study and reveal trends which seems to be inconsistent. The questionnaire would be divided into three parts, focusing on socio-demographic profile of country; popular farming practices and sources of input subsidy usage for agricultural production. An empirical model will be developed to identify factors of WTO subsidy policy to improve agricultural production of South East Asian countries. This empirical model estimates the relationship between subsidy policy of particular country among South East Asian Countries and characteristics of efficient agricultural production. The input agricultural subsidy enhance agricultural production so it is considered as dependent variable whereas socio-economic factors such as age, education, income, secondary income and social category and farm practices related factors such as landholdings & leasing of agricultural land, farming as business, awareness about minimum support prices and adoption of crop diversification are considered as independent variables. The dependent variable represent the agricultural subsidy policy of WTO implemented to improve agricultural production related to crop planning & production, post harvest management and sales & marketing of agricultural products.

Regression Analysis

Simple linear regression analysis will be conducted to check agricultural production of South East Asian countries as implementation effects of WTO subsidy policies.

$$Y_i = B_0 + B_1X_{1i} + B_2X_{2i} + B_3X_{3i} + B_4X_{4i} + B_5X_{5i} + \dots B_nX_{ni} + e$$

Where,

$i=1, 2, 3, 4, 5, \dots, n$

Y = Dependent variable

X = Independent variables

B_0 = Constant

B = Coefficients

e = Error term

Conclusions: The study examines how the developed countries have failed to live up to the expectations at the end of the all major conferences meetings of W.T. O., however they would liberalize their agriculture sector and significantly reduce their subsidies. Several Countries naturally adopt trade distorting agricultural policies, tariff-rate quotas, production distorting subsidies, and export subsidies to benefit their domestic agricultural producers. They often impose costs on their consumers, domestic taxpayers (who must pay for every subsidies), and competing foreign producers (who lose their sales). The costs to domestic consumers and taxpayers alone are usually greater in money terms than the benefits to domestic producers. Therefore, eliminating these policies is generally beneficial. The study supports two major conclusions about the economic benefits from eliminating the policies resulted in cost in terms of forgone benefits of keeping these policies. The total annual economic benefit to the world in 2015 from efficiency gains and investment growth that would result from full agricultural liberalization from 1995 to 2010 is in the range of

roughly \$50 billion to \$185 billion or 0.1 percent to 0.4 percent of the value of world output of all goods and services. This analysis includes the effects of liberalization on the rate of productivity and growth in agricultural production from 50 percent to more than 90 percent. The cost of these policies that distort agricultural trade is roughly two thirds of the total cost of all policies that distort trade in goods of any kind. This would support the following conclusions about such effects of the policies that distort world agricultural trade, tariffs and tariff-rate quotas followed by domestic subsidies and then export subsidies. Subsidies tend to benefit countries purchasing the subsidized products and to harm countries granting the subsidies and countries that are competing as agricultural exporters. Since most subsidies are granted by developed countries tend to benefit developing countries but the failure of the WTO Ministerial Conference at Seattle has led to a temporary hold up the launch of a new round of multilateral trade negotiations. Despite the consequent uncertainties, the integral agenda from the Uruguay Round has been mandated for negotiations on agricultural products and liberalization to commence in the year 2000. In this study, we have to analyze estimates of the economic effects that might be realized from trade liberalization for India and other major ASEAN countries in different W.T.O. rounds. The expected welfare gain of the world is close to 0.5% over the 2010 database that incorporates the implementation of the Uruguay Round negotiations. India's welfare gain is 1.1% (\$4.7 billion over its 2005 GDP) when the UR scenarios get fully implemented. India's additional welfare gain amounts to 2.7% (\$11.4 billion) when the assumed Millennium Round multilateral trade liberalization is completed. Resources in India are allocated towards labor-intensive sectors i.e. food, beverages, and tobacco since real returns to both labor and capital increase the scale effect (percent change in output per firm). The gains from the argil-liberalization scenarios to be interpreted in the light of the assumptions of our study. In particular, our study captures the effects of dynamic changes in agricultural production efficiency and techno-economic growth in field of agriculture. It is evident that developed countries are shifting their subsidies from the first type to the second type, but there is still a damaging effect on developing countries. Meanwhile some developing countries have also been pressurized to reduce their domestic subsidies, with adverse effects. The effects of import liberalization on developing countries, with special reference to the Asian region, are then examined and illustrated with several examples. Finally the study makes some general points and some specific proposals on how the negotiations on the Agreement on Agriculture could proceed, in particular on the modalities of the negotiations. While these countries reduced their reducible subsidies to 80 per cent, they have also at the same time raised the exempted subsidies substantially. The result is that total domestic subsidies in developed countries are now much higher compared to the base level in 1996-98. Thus, in the ASEAN countries the subsidy in the base period 1996-98 was US\$83 billion, and it was increased to US\$195 billion in 2006. In the United States, the corresponding levels are US\$50 billion and US\$158 billion. The perceived reasons for exempting these subsidies in the developed countries are to reduce trade distorting factors. The welfare effects of these changes are the reason for their loss in order to draw natural resources into agriculture where scale economies made them more productive. The biggest gainers

from agricultural liberalization in this scenario are Thailand, Malaysia, etc.

Their gains are likely the clear-cut implications of comparative advantage, with high initial trade barriers.

Bibliography

1. Brown, Drusilla K. and Robert M. Stern. 1999. "Measurement and Modeling of the Economic Effects of Trade and Investment Barriers in Services," presented at the World Services Congress, Atlanta, GA, November 1-3.
2. Brown, Drusilla, Alan V. Deardorff, and Robert M. Stern. 2005. "Protection of Real Wages: Old and New Trade Theories and their Empirical Counterparts," Discussion Paper 331, Research Forum for International Economics, Institute of Public Policy Studies, University of Michigan.
3. Brown, Drusilla K., Alan V. Deardorff, Alan Fox, and Robert M. Stern. 2006. "The Liberalization of Services Trade: Potential Impacts of the Aftermath of the Uruguay Round," in Will Martin and L. Alan Winters (eds.), *The Uruguay Round and the Developing Countries*.
4. Cambridge University Press, Cambridge. Chadha, Rajesh and Sanjib Pohit. 2007. "Rationalising Tariff and Non-Tariff Barriers on Trade: Sectoral Impact on Indian Economy," paper prepared for the Tariff Commission, Government of India.
5. Chadha, Rajesh, Sanjib Pohit, Alan V. Deardorff, and Robert M. Stern. 1998a. "Analysis of India's Policy Reforms," *World Economy* 21:235-59.
6. Chadha, Rajesh, Sanjib Pohit, Alan V. Deardorff, and Robert M. Stern. 1998b. *The Impact of Trade and Domestic Policy Reforms in India: A CGE Modeling Approach*. Ann Arbor: University of Michigan Press.
7. Chadha, Rajesh, Sanjib Pohit, Alan V. Deardorff, and Robert M. Stern. 1999. "Phasing out the Multi-Fibre Arrangement: Implications for India," paper presented at the Second Annual Conference on Global Economic Analysis, June, Copenhagen.
8. Chadha, Rajesh. 2004. "GATS and Developing Countries: A Case Study of India," forthcoming in Robert M. Stern (ed.), *Services in the International Economy: Measurement and Modeling, Sectoral and Country Studies, and Issues in the WTO Services Negotiations*. University of Michigan Press.
9. Francois, Joseph and Anna Strutt. 1999. "Post Uruguay Round Tariff Vectors for GTAP Version 4," Mimeo, Faculty of Economics, Erasmus University, Rotterdam, Netherlands.
10. Government of India 1993. "Tax Reforms Committee: Final Report Part II," Chairman: Raja J. Chelliah, Ministry of Finance.
11. Hoekman, Bernard. 1995. "Tentative First Steps: An Assessment of the Uruguay Round Agreement on Services," Centre for Economic Policy Research, London.
12. Joshi, Vijay and I.M.D. Little 1994. *India: Macroeconomics and Political Economy 1964-1991*,
13. The World Bank, Washington, D.C. McDougall, Robert et al. 1998. *Global Trade, Assistance and Protection: GTAP-4 Database*, Purdue University.
14. Mehta, Rajesh. 1998. "Tariff and Non-Tariff Barriers of the Indian Economy: A Profile," Study Report submitted to the Tariff Commission, Government of India
15. Mishra S. N. and Ramesh Chand (1995). Private and Public Capital Formation in Indian agriculture: Comments on Complementarity Hypothesis and Others, *Economic and Political Weekly*, V. 30(24): A-64 - A-79, June 24, 1995.
16. Pursell, Gary. 1996. "Indian Trade Policies Since the 1991/92 Reforms," Mimeo, World Bank.
17. Stern, Robert M., Drusilla K. Brown, Dilip K. Das, and Alan V. Deardorff. 2000. "The Stakes for the Asian Economies in the Forthcoming WTO Negotiations," a study prepared for the Asian Development Bank, in process.
18. Srinivasan, T. N. 1998. *Developing Countries and the Multilateral Trading System*. Westview Press.
19. WTO. 1998. *Trade Policy Review: India*. Bernan Associates, Geneva.
20. Vaidyanathan A. (1996). Agricultural Development: Imperatives of Institutional Reforms, *Economic and Political Weekly*, 31(35/37): 2451-2458, September 1996.
21. Anderson & Hayami (1996) *Study into the Nature and Extent of Subsidies in the Agri-Sector of APEC Member Economies*
22. Lindert (2001) *Government Financial Transfers to Agri-Industries in ASEAN countries*
23. M.A. Rehman et.al. (1998) *WTO Agriculture subsidies negotiations: implications for access agreements and Agriculture Policy in ASEAN countries*