



Full Length Article

Analyzing the Role of Agricultural Extension Services in Mango Production and Marketing with Special Reference to World Trade Organization (WTO) in District Multan

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ABSTRACT

Mango is one of the main fruit crops of Pakistan, but it is under the threat of world trade organization (WTO). For this purpose, the present study was conducted to analyze the agricultural extension services in mango production and marketing with special reference to WTO in district Multan. The population of the study consisted of all mango growers, Agriculture Officers (Extension), research staff of Mango Research Station Shujaabad, arhteas and mango experts of district Multan. But in this manuscript following specialists were selected as respondents all the Agricultural Officers (10), one Executive District Officer, one District Officer, three Deputy District Officers and one Horticulturist in the selected tehsils on census basis thus making total number of 16 respondents. The research findings indicate that an overwhelming majority of the respondents were aware of WTO. It was concluded that awareness level of the respondents about the various agreements related to WTO was low and in some cases it was zero. The positive impact of WTO as identified by the respondents was that it will be helpful in providing finished product at the doorsteps of consumer and safe to human and animal health, but on the other hand the main threat of total command over markets by developed countries through their higher technology and well equipped industry especially related to mango fruit and its byproducts. © Friends Science Publishers

Key Words: Extension services; WTO; Mango; Market

INTRODUCTION

In the scenario of Economic Survey of Pakistan, the total population in Pakistan is 163.76 million in 2009. Out of total population, an overwhelming majority of the population depends directly or indirectly on income streams generated by the agriculture sector. The agriculture sector remained the leading sector with its job absorption ability and it still absorbs 44% of the country's labor force. Agriculture and agro-based industry is the back bone of the Pakistan economy.

In Pakistan Mango (*Mangifera indica*) is one of the most favorite and liked fruit of the world. It has typical fragrance and delighted taste. Because of these typical qualities it bears the title of "King of fruits" and "Nectar of God". Mango was first reported to be born in Eastern India, Burma and Andaman Islands (Tasneem, 1989). Ranked of Pakistan is 5th in the world regarding mango production, whereas India and China had improved their production in past decade (FAO, 2000).

The potential yield per hectare of mango is 21.6 tha⁻¹ as compared to its average yield of 9.96 tha⁻¹ (Jiskani,

2002). This shows a vivid difference, which may be attributed to multifarious factors like insect/pests of mango like mealy bug, fruit fly, diseases like powdery mildew, anthracnose, die back, as well as weather hazards, defective marking system and poor post and pre harvest practices.

Agricultural extension services are mainly responsible for the dissemination of information and its adoption/diffusion. Extension services provide the basis for management of farmer crops and their produce. In this connection heavy responsibilities lie on the shoulders of Agricultural Extension Department to provide the necessary information to cope with the present situation, as well as forthcoming challenges of different world pacts and decisions (Agunga & Singh, 2000).

World trade strategies and maneuvering of import/export may create conflict among different countries regarding business in global market. In some cases, the governments compensate their deficit of open market of the world by increasing the prices of the commodities in their own countries, by increasing tariff and subsidies and other countervailing measures like quotas to save their domestic industry, which create frustration among the customers. To

minimize these disparities, international organization namely “World Trade Organization” (WTO) was established in 1995, which deals with the global rules of trade between nations and will enforce its rules and regulations from the year 2005 (Deaton, 1999).

WTO replaced the GATT to boost the world trade. It was agreed to use the world resources efficiently to protect the environment. WTO is the only international organization, which is dealing with the global rules of trade between nations. Its main function is to ensure that trade flows as smoothly, predictably and freely as possible. WTO rules set the basis for national, provincial and local laws, regulations and practices in over 175 countries (WTO, 2000). Virtually all decisions in the WTO are taken by consensus among all member countries and ratified by their parliaments. Trade friction is channeled into the WTO’s dispute settlement process, where focus is on interpreting agreements and commitments and how to ensure that country’s trade policies conform to them. The goal of WTO is to improve the welfare of the people of member countries (WTO, 2001).

WTO has brightened the prospects for Pakistan in the export of most major agricultural commodities. Pakistan has considerable potential in exporting leather and leather made-ups, spices, cut flowers, tropical nuts and fruits (Mango), where developed countries have promised to reduce tariff by some 42-50% in this connection (Anonymous, 2003).

WTO emphasized to implement its recommendations like sanitary and phyto-sanitary measures, impedance of hazardous chemicals, post and pre harvest practices, export and quarantine laws. This miserable situation specially related to mango will become more deplored and the mango growers may face the problems of profit returns. Therefore, it is necessary to conduct a study to explore the hindrances and problems faced by mango growers to cope with the forthcoming problems by the implementation of WTO agreements.

To cope with the future problems that might be causing bottlenecks in the export of quality fruit, the present study was conducted to analyze the role of agricultural extension services in mango production and marketing with special reference to World Trade Organization (WTO) in district Multan.

MATERIALS AND METHODS

The population of the study consisted of mango growers. Multan district comprises three Tehsils namely Jalalpur Pirwala, Multan and Shujabad. The population of the study consisted of all mango growers, Agriculture Officers (Extension), Research Staff of Mango Research Station Shujaabad, Arhteas and mango experts of district Multan. But in this manuscript following specialists were selected as respondents all the Agricultural Officers (10), one Executive District Officer, one District Officer, three Deputy District Officers and one Horticulturist in the

selected tehsils on census basis thus making total number of 16 respondents. The collected data were analyzed and tabulated on SPSS to draw results, conclusions and making pertinent recommendations.

RESULTS

The research findings indicate that an overwhelming majority of the respondents were aware of WTO. These research results are cemented as stated by Anonymous (2003), who stated that agricultural scientists stressed on creating awareness about the WTO agreements among farmers, experts, traders, researchers and other segments of society to meet the future challenges.

About 25.0-100.0% of the respondents were un-aware of the agreements like Agreement on Services, Agreement on Goods, Agreement on Dispute Settlement and Agreement on Intellectual Property Rights, respectively. Besides this 75.0% of the respondents were aware of the Agreements on Agriculture (Table I).

While 25.0%, 18.8% and 6.3% of the respondents were aware of main agreements related to agriculture like Agreement on Tariff and Trade, Agreement on Subsidies, Agreement on Government Procurement and Agreement on

Table I: Distribution of the respondents according to the awareness of main agreements WTO

Agreements	Aware		Unaware		Total	
	n	%	n	%	n	%
Agreement on Agriculture	12	75.0	4	25.0	16	100.0
Agreement on Intellectual Property Rights	2	12.5	14	87.5	16	100.0
Agreement on Goods	1	6.3	15	93.7	16	100.0
Agreement on Dispute Settlement	1	6.3	15	93.7	16	100.0
Agreement on Services	0	0.0	16	100.0	16	100.0

Table II: Distribution of the respondents according to the awareness of the agreements of WTO related to agriculture

Agreements	Aware		Unaware		Total	
	n	%	n	%	n	%
Agreement on Tariff and Trade	4	25.0	12	75.0	16	100.0
Agreement on Subsidies and Countervailing Measures	4	25.0	12	75.0	16	100.0
Agreement on Government Procurement	3	18.8	13	81.3	16	100.0
Agreement on Sanitary and Phyto-Sanitary Measures	1	6.3	15	93.8	16	100.0
Agreement on Trade Related Aspects of Intellectual Property Rights	1	6.3	15	93.8	16	100.0
Agreement on Anti Dumping Laws	0	0.0	16	100.0	16	100.0
Agreement on Trade Related Investment Measures	0	0.0	16	100.0	16	100.0
Agreement on Custom Valuation	0	0.0	16	100.0	16	100.0
Agreement on Pre-shipment Inspection	0	0.0	16	100.0	16	100.0
Agreement on Technical Barriers to Trade	0	0.0	16	100.0	16	100.0
Agreement on Import Licensing Procedures	0	0.0	16	100.0	16	100.0
Agreement on Safe guards	0	0.0	16	100.0	16	100.0
Agreement on Rule of Origin	0	0.0	16	100.0	16	100.0

Table III: Distribution of the respondents according to their response to statements regarding sanitary and phyto-sanitary measures given in WTO

Statement	Agree		Disagree		Undecided		Total	
	n	%	n	%	n	%	n	%
No diseased mango i.e., completely free from the following: rotted, pre-mature, over-mature, injured, dry, spotted and anthracnose	14	87.5	2	12.5	–	–	16	100.0
Standardization regarding pre-harvest and post-harvest, grading, time of harvesting, packing, storage and transportation should be maintained	14	87.5	–	–	2	12.5	16	100.0
Preventive measures have been suggested to produce a commodity with such a manner that should not affect human, plant and animal health	11	68.7	–	–	5	31.2	16	100.0
Prevention of attack of fruit fly (a quarantine pest) on mango and mango products	9	56.2	1	6.2	6	37.5	16	100.0
Prevention of transit fungi	9	56.2	–	–	7	43.7	16	100.0
(i) Pesticides which have long residual effects have been strictly prohibited to use on all edible crops	7	43.7	5	31.2	3	18.7	16	100.0
Prevention from soft rot (storage & transit bacteria)	7	43.7	2	12.5	7	43.7	16	100.0
Quality control of perishable products (mango) i.e., use of calcium carbide to mature fruit is toxic and have residual effects	6	37.5	3	18.7	7	43.7	16	100.0

Table IV: Distribution of the respondents according to their response regarding positive aspects of WTO on mango industry

Positive Aspects	Agree		Disagree		Undecided		Total	
	n	%	n	%	n	%	n	%
Finished standardized product seems to be reached at the door of consumer	15	93.7	–	–	1	6.2	16	100.0
Priority has been given to human, plant and animal health in WTO policies	14	87.5	–	–	2	12.5	16	100.0
Consumer has variety of choices	14	87.5	–	–	2	12.5	16	100.0
Sub standard product will be excluded from the market	13	81.2	–	–	3	18.7	16	100.0
Developing countries are promised to be given technical assistance regarding modern know how	12	75.0	4	25.0	–	–	16	100.0
Within WTO policies no compromise on quality, quantity and hygienic conditions	10	62.5	3	18.7	3	18.7	16	100.0
40 to 50% tariff has been promised to reduced regarding fruits and perishable products	9	56.2	2	12.5	5	31.2	16	100.0
Decision would be made on consensus basis regarding dispute settlement	7	43.7	2	12.5	7	43.7	16	100.0
World human society would seem to be a global village	6	37.5	4	25.0	6	37.5	16	100.0

Table V: Distribution of the respondents according to their response to statements regarding negative impact of WTO on mango industry

Negative Impact	Agree		Disagree		Undecided		Total	
	n	%	n	%	n	%	n	%
Developed countries have better resources hence they can capture the global market by their patent products	15	93.7	1	6.2	–	–	16	100.0
Developed countries assist their farmers other than subsidy scheme to secure their domestic industry	13	81.2	1	6.2	2	12.5	16	100.0
There is no match of economic competition between developed and developing countries because of the huge difference between the resources available	12	75.0	4	25.0	–	–	16	100.0
Through monopolistic multinational corporations developed countries may command over the economy and policies of the developing countries	11	68.7	3	31.2	2	12.5	16	100.0
They can disturb global market by the application of child labour laws	10	62.5	3	18.7	3	18.7	16	100.0
The process to get intellectual property rights for the developing countries is so lengthy that it can create problems to patent their products timely	10	62.5	6	37.5	–	–	16	100.0
Political involvement to capture the resources of the developing countries is another reason	7	43.7	3	31.2	6	37.5	16	100.0
Sanitary and Phyto-Sanitary measure might be used as weapon against developing countries to deteriorate their economy and commodity status	7	43.7	5	31.2	4	25.0	16	100.0
Developing countries are not in position to compel the developed countries to abide the rules	7	43.7	5	31.2	4	25.0	16	100.0

Intellectual Property Rights, Agreement on Sanitary and Phyto-Sanitary Measures by the respondents (Table II). Whereas, 100.00% respondents were un-aware of agreements like Agreement on Anti-Dumping, Agreement on Trade Related Investment Measures, Agreement on Custom Valuation, Agreement on Pre-shipment Inspection, Agreement on Technical Barriers to Trade, Agreement on Import Licensing Procedures, Agreement on Safeguards and Agreement on Rule of Origin, respectively.

While poor to overwhelming majority 37.5-87.5% of the respondents was agreed with all the statements regarding

Sanitary and Phyto-Sanitary Measures given by WTO, while only 6.2-31.2% of the respondents disagreed about all the statements (Table III). However, 12.5-43.7% of the respondents remained un-decided about all the statements. The comments of different researchers related to different sanitary and phyto-sanitary measures give strength to the present results as stated by Vijayasegaran (1994) concluded that infestation by fruit flies (tephritidae: Diptra), common in the tropics was a major constraint to the production and export of tropical fruits. Current control procedures include cover sprays of insecticides, spot sprays of protein baits,

Table VI: Distribution of the respondents according to their response regarding the suggestions to overcome the negative impact of WTO

Suggestions	Agree		Disagree		Undecided		Total	
	n	%	n	%	n	%	n	%
Awareness should be increased about the agreements of WTO among the farming community	16	100.0	–	–	–	–	16	100.0
Developing countries should take immediate step to upgrade the products	16	100.0	–	–	–	–	16	100.0
Pakistan should increase the cultural, mechanical and post harvest practices according to international standards	16	100.0	–	–	–	–	16	100.0
Pakistan in collaboration with other developing countries should strive to strengthen such regional trade association as SAARC and ECO	16	100.0	–	–	–	–	16	100.0
The government intervention in agricultural commodity markets is against the spirit of trade liberalization and must be replaced by regulated private marketing system	12	75.0	1	6.2	3	18.7	16	100.0
Developing countries should introduce biological control system hence to minimize the use of pesticides	9	56.2	3	18.7	4	25.0	16	100.0
Government should take step to patent their products as per rule	9	56.2	–	–	7	–	16	100.0
Pakistan can join hands with other developing countries to lobby for extracting maximum possible benefits from the arrangements (WTO)	9	56.2	4	25.0	3	18.7	16	100.0
Developing countries and underdeveloped as a joint venture should pressurize the developed countries to comply with tariffication, tariff reduction, de-escalation of tariffs on perishable products and demand financial and grant assistance for agricultural developments and food imports, respectively	8	50.0	4	25.0	4	25.0	16	100.0
Pakistan would be well advised to curtail illicit trade practice and ensure quality of its products in terms of purity of the product environmental considerations and labour standards for satisfactory compliance of WTO's emerging requirements	7	43.7	3	18.7	–	37.5	16	100.0
For an effective entry into the export market, Pakistan needs to concentrate on commodities with high comparative advantage and invest heavily in storage, packaging, grading, procurement and delivery system technologies	6	37.5	–	–	–	–	16	100.0

orchard sanitation and fruit wrapping, all of which seek to prevent direct damage to fruits or were aimed to population suppression, mostly in individual plantations. These field control techniques enable fruit production of sufficient quality to meet the needs of domestic consumption, as well as that for export to markets, where fruit flies were not quarantine pests.

Fair to overwhelming majority 37.5-93.7% of the respondents were agreed with the positive aspect of WTO, while only 12.5-25.0% of the respondents disagreed, as well as 6.2-43.7% of them were un-decided with the various positive aspects of WTO on mango industry (Table IV). Khan and Mahmood (2000) showed that Pakistan has considerable potential to get benefit from export of leather made ups, spices, cut flowers plants, tropical nuts and fruits, where developed countries have promised to reduce tariffs by 40-50%.

Fair to over-whelming majority 43.7-93.7% of the respondents agreed with the statements regarding negative impact of WTO on mango industry, while 6.2-37.5% of the respondents disagreed with the negative impact of WTO (Table V). However, 12.5-37.5% of the respondent remained un-decided about the negative impact of WTO.

Table VI depicts that 37.5-100.00% of the respondents were agreed with the suggestions given to overcome the negative impact of WTO. Whereas, 6.2-25.0% of the respondents were disagreed with the statement like, the government intervention in agricultural commodity markets is against the spirit of trade liberalization and must be replaced by regulated private marketing system and developing countries and underdeveloped as a joint venture should pressurize the developed countries to comply with tariffication, tariff reduction, de-escalation of tariffs on perishable products and demand financial and grant

assistance for agricultural developments and food imports, respectively. However, 18.7-37.5% of the respondents remained un-decided about suggestions pertaining to Pakistan can join hands with other developing countries to lobby for extracting maximum possible benefits from the arrangements (WTO) and Pakistan would be well advised to curtail illicit trade practice and ensure quality of its products in terms of purity of the product environmental considerations and labour standards for satisfactory compliance of WTO's emerging requirements, respectively.

DISCUSSION

The study results showed that an over whelming majority of respondents were aware of WTO, but were not aware of its details and different laws. To cope with the future challenges of WTO and competition in trade especially in the field of agriculture it is necessary that all the stakeholders of game should be well aware of threats and benefits of these laws, which leads to smart profits and recovery of poor economy. The different commodities of agriculture like cereals, fruits, vegetables etc. should ranged in the criteria provided by the WTO so as the country may earn its good exchequer. Segre (1998) concluded that maintenance of human and plant health were primary considerations in tropical fruits and vegetable-importing countries. The WTO's Sanitary and Phyto-sanitary (SPS) agreement sets and encourages the adoption of international standards, while at the same time offering the rights of countries to set their own health and safety standards of scientifically justifiable and not likely to result in an unreasonable barrier to trade. Diaz-Bonilla and Robinson (1998) concluded that genetically modified agricultural products and ensuring technological break through offer a

special challenge. It has been pointed out that public may block the development of important new technologies to feed the world in coming decades. If the policy makers do not handle the issues surrounding genetically altered food sensitivity, particularly through rigorous analysis of the risk to human health and biodiversity, it was harmful to mankind.

CONCLUSIONS

From above it was concluded that awareness level of the respondents about the various agreements related to WTO was low and in some cases it was zero. The positive impact of WTO as identified by the respondents was that it will be helpful in providing finished product at the doorsteps of consumer and safe to human and animal health, but on the other hand the main threat of total command over markets by developed countries through their higher technology and well equipped industry especially related to mango fruit and its byproducts.

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(Received 11 November 2009; Accepted 01 January)