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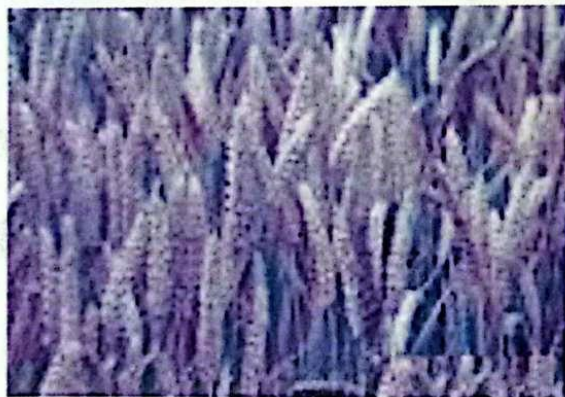
April-June, 2012



Sugarcane



Rice (Paddy)



Wheat



Cotton

Mission Statement of API

To provide professional inputs to agriculture policy and recommendations relating to major and minor crops for meeting long-term objectives towards enhancing production.

Agriculture Policy Institute
Government of Pakistan
Islamabad

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HOW TRIPS AFFECTS AGRICULTURE SECTOR – ALTERNATIVE MODELS TO PROTECT FARMER'S BREEDING RIGHTS

By

Sohail Mohammad Khan, Chief (API)

Abstract

Trade related subjects of Intellectual Property Rights (TRIPS) Agreement of WTO is facing problems since its inception. Farmers of developing countries have strong reactions against this law as it does not protect breeding rights of plants and animals.

In Pakistan a new plant breeding right law is under consideration in the Parliament Civil Society Organization are demanding an alternative model which should also be considered before final approval.

In this article two alternative models have been suggested. These models have been adopted by India. There is a need that in Pakistan proposed PBR should be reviewed once again.

1. Introduction

1.1 In developing countries, agriculture remains the main source of livelihood for 50 to 90 percent of the population. Of this percentage, small farmers make up the majority, i.e., 70 to 95 percent. These farmers have been practicing traditional farming methods for millennia. These methods tremendously contribute in harnessing ecological potential of land and conserving and developing genetic resources. Importantly, such traditional knowledge not only help them sustain their life but also largely contribute to the development of genetic resources and farming systems.

1.2 However, in recent years, due to forces of globalization and the World Trade Organization (WTO), the livelihood patterns of these farmers, their traditional knowledge, and genetic resources are becoming subject to serious threats. The Trade Related. Aspects of Intellectual Property Rights (TRIPS) Agreement of the WTO has extended intellectual property rights (IPRs) in agriculture rendering the developing countries' farmers more vulnerable, marginalized and disadvantaged. By irrationally strengthening the position of the breeders and commercial seed companies of developed countries in the world agricultural market, the provisions of TRIPS Article

27.3 (b) have severely restricted the rights of farmers in the developing countries.

1.3 The WTO agreement on Trade Related aspects of Intellectual Property Rights (TRIPs) is a comprehensive set of new rules and standards for Intellectual Property Rights (IPRs), which must be adopted by all WTO member countries from 1996 onwards, depending on the status of development of the individual Member State. Section 5 of TRIPs obliges Member States to provide patent protection for all inventions, 'both products and processes. Clause 27.3 (b) of section 5 is about how plants and animals be patented.

1.4 TRIPS agreement contains an exemption in clause 27.3 (b) that allows WTO members to refuse to grant patents for plants and animals (other than micro-organisms and non-biological and microbiological processes). But if members wish to deny patents to plants, they must protect them by some "**effective sui generis regime**" a system specially designed for a certain type of intellectual property or a combination of the two systems.

1.5 The drafters of the TRIPS Agreement undoubtedly had in mind the **International Convention for the Protection of New Varieties of Plants (UPOV Convention)** a regime that many industrialized countries are using, very much close to patents. Although, some developing countries are creating their own *sui generis* systems, citing aspects of UPOV on which they want to improve. However, it is generally feared that UPOV model will be set as the "effective *sui generis* system" and all member countries will be pressurized to opt UPOV. Although Pakistan has formulated patent law such as Plant Breeders Right's (PBR) Act but facing bilateral pressures to join UPOV. Civil Society in Pakistan argues that three elements of UPOV's 1991 Act may conflict with sustainable development objectives. The civil society organizations' viewpoint is that all forms of life including microorganisms and microbiological processes should be excluded from section 5 of TRIPs. If the world has yet to go with the present state of agreement anyway, it is argued that the word 'effective *sui generis* system had made the provision given in clause 27.3 (b) doubtful. The Civil society has the following criticism

1.5.1 **Duration of protection:** Twenty years of protection, this may be too long from a consumer's perspective.

1.5.2 **Breeders' exemption:** Limited scope for breeders' exemption-the traditional free access of breeders to protected

material for research purposes. If the new variety is "essentially derived" from the original variety, the intellectual property rights must be shared with the original innovator.

- 1.5.3 **Farmers' rights vs breeders' rights:** Strong protection of breeders' rights-the intellectual property rights of formal innovators-but no protection of farmers ' rights the intellectual property rights of informal (typically poor) innovators.

1.6 Based on this criticism, it is generally argued that TRIPs Agreement will affect the ownership of local seeds, plants and animals and, as a result, will endanger the food security of Pakistan. Some of its impacts on farmers' rights, indigenous knowledge, bio-diversity and food security are given below:

CONCERNS OF CIVIL SOCIETY

2. TRIPS and Farmer's Rights

2.1 Patents and plant variety protection (PVP) are two different forms of IPRs. Both provide exclusive monopoly rights over a creation for commercial purposes over a period of time. A patent is a right granted to an inventor to prevent all others from making, using, and/or selling the patented invention for 20 years. The criteria for a patent are novelty, inventiveness (non-obviousness), and utility. The provision for patenting on life form is the most contentious issue within TRIPS.

2.2 PVP provides patent like rights to plant breeders. What gets protected in this case is the genetic makeup of a specific plant variety. The criteria for protection are: novelty, distinctness, uniformity, and stability (DUS). PVP laws can provide exemptions for breeders, allowing them to use protected varieties for further breeding, and for farmers, allowing them to save seeds from their harvest. For the seed industry, PVP is regarded as the weaker sister of patenting mainly because of these exemptions: Yet, often touted as a 'soft' kind of patent regime, PVP laws are just as threatening as industrial patents on biodiversity, and also represent an attack on the rights of farmers.

3. Impact on farmers' rights

3.1 WTO agreement on TRIPS disregards the interests of consumers, farmers of developing countries. Farmers constitute majority population of most of the developing countries and will directly be affected by this

agreement. TRIPS agreement is threatening the real owners of natural resources on demands being made by some of the industrialized countries. TRIPS agreement is a protectionist device promoting corporate monopolies of seeds, genes and medicine. It shifts the balance of control away from public interest to the private gains of patent holders. Who will gain control over crop seeds and foodstuffs? Concern of Pakistan's civil society is that transnational companies (TNCs), through genetic modification (GM) technology, will acquire patents and will, eventually, control everything from genes, seeds, plants, and agricultural harvests to food-stuffs. It shows, in fact, a monopolistic competition among TNCs and farmers. Farmers lack the scientific capability to innovate and patent genetic materials and are not even able to catalogue the natural resources they currently have. On the other hand, bio-tech TNCs are putting increasingly more resources and expertise to patent innovations. This is also true in developed countries where farmers are not able to contend with companies. There is a famed case of Percy Schmeiser--a Canadian farmer who was accused of illegally using Monsanto genetically engineered (GE) seed. In April 2001, the Supreme Court of Canada ordered him to pay eighty thousand dollars to Monsanto for violating its patent rights. Schmeiser's seed had, in fact, been accidentally contaminated by the flight of pollen. The Canada Court was of the opinion that it was irrelevant whether the farmer's seed had been accidentally contaminated by the flight of pollen or if Monsanto's crop seed had, in fact, been used deliberately. Enforcing the corporation's patent rights had in all events priority.

3.2 Similarly, in Pakistan farmers used Monsanto's maize seed in the Swabi District and failed to produce anything. They complained about it to the seed dealer and they were given another bag of seed on credit basis. It is shocking to report that again they failed to harvest maize crop. Now the point is that the farmer has neither the right nor the power to take legal action against such a big TNC. Eventually, they re-ploughed all their fields and sowed the local maize seed for their subsistence with a certain degree of success.

3.3. There are four different but interrelated rights of farmers, which are mostly affected by these IPRs.

3.1 Right to Seed

3.1.1 Most farmers in developing countries depend on informal seed supply system, i.e., they save, exchange, reuse and sell seeds informally in close connection with their neighbours and local people. Under the IPR

regime, farmers will be denied the right to save patented or protected seeds for subsequent planting and will have to buy seeds for each season. They will lose control over plant varieties to corporations that control the seed market. Seed companies have already sued hundreds of Canadian and US farmers for using farm-saved patented seeds. Farmers in developing countries will not be spared. Already, six big companies (Monsanto, DuPont, Syngenta, Dow, Aventis and Grupo Pulsor) own 74 percent of the patents on major food crops, including rice, wheat, maize, soya and sorghum.

3.2 Impact of TRIPs on Bio-diversity

3.2.1 A serious concern is the rapidly shrinking genetic diversity of cultivated species, as farmers switch from traditional varieties to new high-yielding strains developed by professional breeders. During the Green Revolution, farmers turned away from traditional varieties to adopt modern strains that promised better yields and better resistance to pests and disease. By providing incentives to breeders to develop the new improved varieties, strengthened intellectual property rights contribute to this decline in diversity, although they are only one of a host of contributing factors. As a matter of fact, high-yielding varieties (HYVs) have already displaced less profitable crop seeds. Now, with the advent of WTO agreements, corporations will increasingly prevent access to their patented genetic resources through using exclusive rights.

3.2.2 The other threat is that under the umbrella of WTO, corporations are pirating bio-diversity of the developing countries by declaring the genes that have been "discovered" by them, and the crop seeds belonging to them, as their "property".

3.2.3 TRIPs agreement is also a conflicting agreement with the UN Convention on Biological Diversity (CBD). CBD recognizes the sovereign rights of States over their biological and genetic resources. The Convention requires parties to protect and promote the rights of communities, farmers and indigenous people including their customary use of biological resources and knowledge systems. However, TRIPs does not reinforce the provisions of CBD. It does not require the patent holder to either disclose the source of origin, get prior informed consent from the genetic resource/knowledge holder (thus encouraging bio-piracy), or ensure that there is an equitable benefit sharing. Patenting and plant breeders' rights under TRIPs carry with them the aims of politics of control and legalized bio-piracy.

3.3 Right to Traditional Knowledge

3.3.1 Respecting traditional knowledge does not mean keeping it from the world. It means using it in ways that benefit the communities from which it is drawn. However, there seems no respect for traditional knowledge within the IPR system. While developing countries are home to about 90 percent of the world's genetic resources and traditional knowledge, more than 90 percent of world's research and development activity takes place in industrial countries. Whereas a generich, technology-poor South and a technology rich, gene deficient North show the potential for mutually beneficial bargains between the two groups, a number of prominent companies of the North are using the traditional knowledge of farmers as well as plants or resources found in developing countries without remuneration.

3.4 Impact of TRIPs on Indigenous Knowledge

3.4.1 It is a recognized fact that poverty has not been alleviated so far in developing countries because the indigenous socio-economic systems have been neglected and excluded from the development and decision-making processes. WTO agreement will further affect the indigenous knowledge of farmers. Under the TRIPs agreement, patents and effective sui generis systems, such as PBR Act in Pakistan, will restrict farmers to continue centuries' old traditional system of seed storage, sharing and multiplying.

3.5 Right to Equity in Benefit Sharing Process

3.5.1 Throughout the world, farmers and their communities have developed a vast portfolio of genetic diversity within crops and other plant species, which form the raw material for all agricultural activities. Modern plant breeding, in fact, builds on plant germ plasm resources that have been traditionally developed and donated by farmers. However, there are many cases revealing that a large number of patents have been granted on genetic resources and knowledge from developing countries without the consent of the possessors of the resources and knowledge. There has been extensive documentation of IPR protection being sought over resources 'as they are' without further improvement. These include a US patent on quinoa, which was granted to researchers of the Colorado State University, a US plant patent on ayahuasca, a sacred and medicinal plant of the Amazon region, and other patents on products based on plant materials and knowledge developed and used by local and indigenous communities, such as those relating to the neem, kava, barbasco, endod and turmeric.

3.6 Right to Participate in Decision Making Process

3.6.1 Farmers are unorganised group in the developing countries. They are, therefore, not consulted in the decision making process on matters related to their resources. It is often the organised group, i.e., breeders and commercial seed companies, which decide their position whether that is in the market or during negotiations at the multilateral level. Such an exclusion from the decision making process, which determines their fate, obviously is a violation of their right. These evidences reveal that farmers' rights are not a priority under the IPR regime. If conservation and development are going to be mutually reinforcing, farming communities should not merely enjoy their right to receive economic benefit for the role they have played in the conservation and development of genetic resources, their rights to seed, traditional knowledge and take part in the decision making process should also be protected and promoted. Notably, there are two important treaties - the Convention on Biological Diversity (CBD) and International Treaty on Plant Genetic Resources (ITPGRFA) - that seek to secure the rights of farmers to plant genetic resources and recognise their role in conserving biological diversity. Developing countries have observed these treaties as important guidelines to protect farmers' rights. They have been raising concerns at different fora that the harmonization of TRIPS with them, especially the CBD, is essential to protect farmers' rights.

3.7 Impact of TRIPS on Food Security

3.7.1 In the age of modern agriculture, poor communities face difficulty to produce or purchase food. Food distribution system is already a problem and once the food production and distribution system will be in the hands of corporations, poor communities will not be able to purchase food at company's price.

3.7.2 The consumers have to see monopoly of patent owners, since they will have exclusive rights to prevent third parties to make, use, sell or import patented food items. Farmers will not be allowed to multiply seeds without their consent.

3.7.3 The other important thing to note is that food security is not merely a question of enough amounts of foodstuff in quantitative terms as it is often expressed in the official documents. The quality of food available for the masses is also important. Apart from safety of food, the question of food security also means diverse and quality food for healthy lives. Now in a

situation when corporation will produce and market food, nobody will be able to question its quality.

4. Option to Protect Farmers' Rights

4.1 As members of the WTO, developing countries are required to provide protection to plant varieties either through patent, an effective *sui generis* system or a combination of both. Given the negative consequences of patents, developing countries have chosen to adopt the *sui generis* system. However, the devil lies in the details. TRIPS requires members to adopt an 'effective' *suigeneris* system but does not mention what effective means. Resultantly, the ambiguity of this word has strengthened the position of the developed countries to interpret what an effective *sui generis* system is. They refer International Union for the Protection of New Varieties of Plants (UPOV) as an effective model for PVP laws. However, UPOV has been subject to severe criticism for many reasons.

4.1 Models to Protect Farmers' Rights

4.1.1 While many developing countries including China and South Korea have already enacted PVP laws in tune with UPOV, many others including Bangladesh, Indonesia, Pakistan, Philippines and Sri Lanka are consulting UPOV to devise their PVP laws. Amidst pressures from the developed countries to join UPOV, the developing countries, which are consulting UPOV, should take the stance taken by Nepal. Nepal managed to fend off the US pressure to join UPOV at the time of its accession negotiations at the WTO. At the same time, these countries should also take note of the fact that in response to UPOV and capitalising on the TRIPS flexibility to adopt *sui generis* legislation, India and Namibia has devised farmer-friendly PVP laws. While India has devised its law based on Convention of Farmers and Breeders (CoFaB), which is developed by Gene Campaign, a Delhi based non-governmental organisation, Namibia has based its law on the African Model Law for the Protection of the Rights of Local Communities, which is developed by Organisation for African and Unity (OAU). These two models could be of immense significance to other developing countries. However, not all countries have same nature of farming systems and plant varieties. Therefore, other developing countries can use these models as a reference so that they could prepare PVP laws that suit their socioeconomic, cultural and geographic needs.

4.2 Convention of Farmers and Breeders.

4.2.1 CoFaB seeks to secure the interests of developing countries in agriculture and at the same time protects their farmers' rights. *Coverage of Varieties* CoFaB is designed to be applied to all botanical genera and species and these should all be protected within 10 years of the adoption of the Convention. *Is Farmers' rights* Each contracting state will recognise the rights of farmers by making arrangements to collect farmers' rights fee from the breeders of new varieties. The farmers' rights fee will be levied for the privilege of using landraces or traditional varieties either directly or through the use of other varieties that have used landraces and traditional varieties, in their breeding programme. The rights granted to the farming communities under Farmers' Rights entitle them to charge a fee from breeders every time a land race or traditional variety is used for the purpose of breeding or improving a new variety. Revenue collected from farmers' rights fees will flow into a National Gene Fund (NGF), the use of which will be decided by a multi-stakeholder body set up for the purpose. The convention states that farmers' rights will be granted to farming communities and where applicable, to individual farmers. The convention has provided some special privileges to farmers in some cases compared to breeders. For example:

- a. Rights granted to the farmers will be for unlimited period whereas in the case of plant breeders, it is for a limited period. The period, however, may not be less than 15 years. For plants, such as vines, fruit trees and their rootstocks, forest trees and ornamental trees, the minimum period shall be 18 years.
- b. The free exercise of the right accorded to the farmers may not be restricted whereas in the case of plant breeders, such an exercise may be restricted for reasons of public interest.

4.3 Breeders' rights

4.3.1 Each member state will recognize the right of the breeder of a new variety by granting a special title called the Plant Breeders' Right (PBR). The PBR granted to the breeder of a new plant variety is that prior authorization shall be required for the production, for purposes of commercial and branded marketing of the reproductive or vegetative propagating material, as such, of the new variety, and for the offering for sale or marketing of such material.

4.3.2 Authorisation by the breeder shall not be required either for the utilization of the new variety as an initial source of variation for creating other new varieties or for the marketing of such varieties. Such authorisation shall be required, however, when the repeated use of new variety is necessary for commercial production of another variety. At the time of application for the PBRs, the breeder of the new variety must declare the name and source of all varieties used in the breeding of the new variety. Where a landrace or farmer variety has been used, this must be specifically mentioned.

4.3.3 The convention requires that a variety for which rights are claimed must have been entered in field trials for at least two cropping seasons and evaluated by an independent institutional arrangement. The breeder at the time of getting rights will have to provide the genealogy of the variety along with DNA finger printing and other molecular, morphological and physiological characteristics. Mentioning about nullity and forfeiture of breeders' rights, the CoFaB states that a breeder shall forfeit his/her right when he/ she is no longer in a position to provide the competent authority with reproductive or propagating material capable of producing the new variety with its morphological and physiological characteristics as defined when the right was granted. The breeder will also forfeit his/her right if the "Productivity Potential" as claimed in the application is no longer valid and he/ she is not able to meet the demand of farmers. The convention also provides for making breeder's right null and void if he/ she fails to disclose information about the new variety or does not provide the competent authority with the reproductive or propagating material.

5. African Model Law for the Protection of the Rights of Local Communities

5.1 The African Model Legislation (herein after the Law) is designed for the protection of the rights of local communities, farmers and breeders, and for the regulation of access to biological resources.

5.2. *Coverage of Varieties.* The Law covers biological resources that include genetic resources, organisms or parts thereof, populations, or any other component of ecosystems, including ecosystems themselves, with actual or potential use or value for humanity.

5.1 Farmers' Rights

5.1.1 Recognising farmers' rights the Law states that farmers' rights stem from the enormous contributions that local farming communities, especially

their women members, of all regions of the world, particularly those in the centres of origin or diversity of crops and other agro-biodiversity, have made in the conservation, development and sustainable use of plant and animal genetic resources that constitute the basis of breeding for food and agriculture production.

5.1.2 It mentions that farmers' varieties and breeds are recognised and shall be protected under the rules of practice as found in, and recognized by, the customary practices and laws of the concerned local farming communities, whether such laws are written or not. A variety with specific attributes identified by a community shall be granted intellectual protection through a variety certificate, which does not have to meet the criteria of distinction, uniformity and stability. This variety certificate entitles the community to have the exclusive rights to multiply, cultivate, use or sell the variety, or to license its use without prejudice to the farmers' rights set out in the Law. The Law specifically mentions that farmers' rights shall, with due regard for gender equity, include the right to:

- a. the protection of their traditional knowledge relevant to plant and animal genetic resources;
- b. obtain an equitable share of benefits arising from the use of plant and animal genetic resources;
- c. participate in making decisions, including at the national level, on matters related to the conservation and sustainable use of plant and animal genetic resources;
- d. save, use, exchange and sell farm-saved seed/propagating material of farmers' varieties;
- e. use a new breeders' variety protected under the law to develop farmers' varieties, including material obtained from gene banks or plant genetic resource centers; and
- f. collectively save, use, multiply and process farm saved seed of protected varieties.

5.1.3 The Law, however, has restricted farmers to sell farm saved seed/propagating material of a breeders' protected variety in the seed industry on a commercial scale.

5.2 Breeders' Rights

5.2.1 The Law has recognized breeders' rights stating that their rights stem from the efforts and investments made by persons/institutions for the development of new varieties of plants. Subject to this Law, PBRs in respect

of a plant variety shall exist for a period of 20 years in the case of annual crops and 25 years in the case of trees, vines and other perennials commencing on the day on which the successful application for a PBRs in respect of the plant variety was accepted. In respect of a new variety, PBRs are the exclusive right to sell including the right to license other persons to sell plants or propagating material of that variety; and the exclusive right to produce, including the right to license other persons to produce, propagating material of that variety for sale. At the same time, giving importance to farmers' rights, the Law has stipulated that PBRs in respect of a plant variety is subject to the conditions provided in Part V, i.e., the farmers' rights part of this Law. The Law mentions that any person or farming community may use plants or propagating material of the variety as an initial source of variation for the purpose of developing another new plant variety except where the person makes repeated use of plants or propagating material of the first mentioned variety for the commercial production of another variety. The Law states that any person or farming community may also sprout the protected variety as food for home consumption or for the market; use the protected variety in further breeding, research or teaching; and obtain, with the conditions of utilization, such a protected variety from gene banks or plant genetic resources centers.

6. Capitalizing on Trips Review Process

6.1 One window of opportunity for developing countries is that Article 27.3 (b) is being reviewed. The review began in 1999 and is still underway at the TRIPS Council. The Doha Ministerial of the WTO held in November 2001, having focused on the problems posed by Article 27.3 (b), has clearly directed the TRIPS Council to examine, among others, the relationship between TRIPS and the CBD and the protection of traditional knowledge and folklore. In its review the Council is to be guided by "the objectives and principles set out in Articles 7 and 8 of the TRIPS Agreement" and "to take fully into account the development dimension". Therefore, for developing countries, the TRIPS review process is an important avenue to call on the WTO to reconsider the controversial provisions of patents and PVP. Already, many developing countries have made numerous proposals to amend TRIPS to prohibit patents on life, limit bio-piracy by identifying the origin of genetic materials and traditional knowledge in patent applications or guarantee space within TRIPS for farmers' and indigenous peoples rights. The industrialized countries do not want to 'weaken' the protection their companies get under the current text and are not willing to discuss many of these ideas.

7. Conclusion and Recommendations

7.1 Patents and PVP have a great potential to affect farmers' right to seed, traditional knowledge, benefit sharing and participate in the decision making process. Developing countries regard the *sui generis* system as an effective legal basis to protect farmers' rights. However, developed countries have left no stone unturned to pressurize developing countries to adopt their own system of PVP, i.e., UPOV. But UPOV has been subject to criticism for several reasons not least because it does not suit the farming systems of developing countries. Unfortunately, many developing countries have already enacted their PVP laws in tune with UPOV and many are consulting it in the process of preparing their laws. Interestingly, India and Namibia have taken a different move. While India has enacted its PVP law based on CoFaB, Namibia has based its law on African Model Law. Besides these models, there are two international instruments that explicitly underscore the need to protect farmers' rights - the CBD and ITPGRFA.

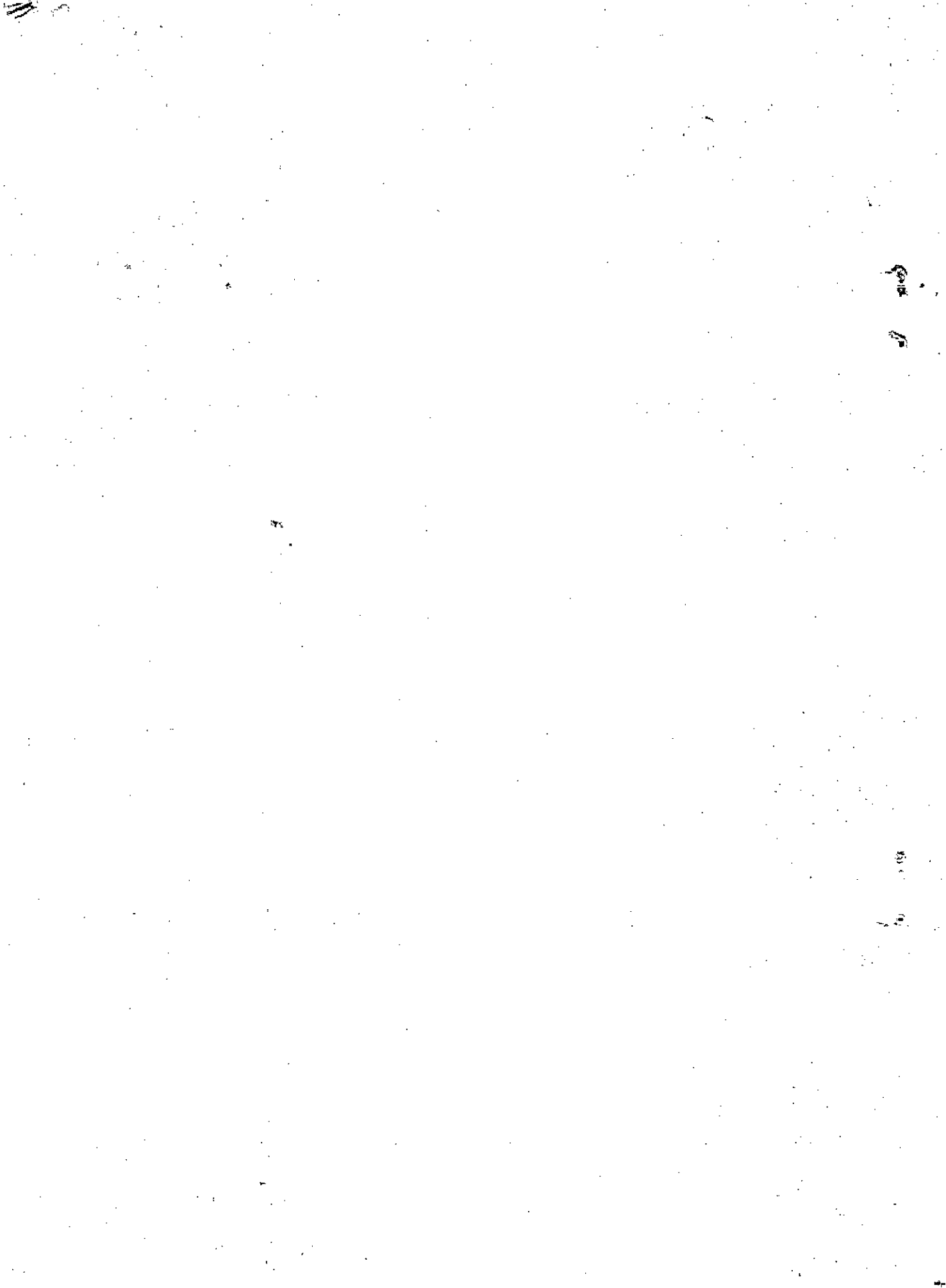
7.2 Therefore, in their effort to devise a *sui generis* system of PVP, developing countries should take CoFaB, African Model Law and two international instruments - the CBD and ITPGRFA - as a reference so that they could protect and promote their farmers' rights. In this context, following recommendations are worth taking note of:

- 7.2.1 A fundamental review and reform of TRIPS needs to be undertaken;
- 7.2.2 Implementation deadlines for developing countries should be extended;
- 7.2.3 A moratorium on dispute settlement action should be placed;
- 7.2.4 It should be reviewed whether TRIPS belongs within the WTO; and
- 7.2.5 As far as patents are concerned, these patents should not be granted on life forms.
- 7.2.6 A precise research should be conducted to support all these arguments to improve TRIPS;
- 7.2.7 Government of Pakistan should take wider consultations before getting approval of PBR from Parliament;
- 7.2.8 Parliament should take a note that farming communities are not being consulted while dealing with WTO obligations to introduce IPRs on seeds and animals;
- 7.2.9 Farmers should be considered as a cultural entity and their rights must be safeguarded; and

- 7.2.10 To avoid WTO implications, farmers are recommended to stick to the indigenous ecological farming practices involving use of own seeds with traditional storage and cultivation practices. If farmers are not dependent on TNCs, they can sustain their survival and ensure their food security.
- 7.2.11 Resist the pressure of developed countries to join UPOV;
- 7.2.12 Capitalize on the TRIPS flexibility, i.e., adopt the *sui generis* PVP law to ensure that farmers' rights are given a due space in such a legislation;
- 7.2.13 Take CoFaB and African Model Law as a reference for identifying the measures to protect and promote farmers' rights;
- 7.2.14 Analyse how the CBD and ITPGRFA can provide necessary guidelines in the process of preparing PVP laws at the national level; and
- 7.2.15 Capitalize on the TRIPS review process as an avenue to ensure farmers' rights.

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STRATEGY FOR STANDARDIZATION AND ADAPTATION IN MARKETING

By

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1. Introduction

1.1 “Ever since the creation of the first multinational business entity around the time of the Sumerians, the ideal world environment for any merchant from any country was one that demanded only one product, designed only one way, priced one price, distributed and promoted the same way throughout the known world. This desire is universal, getting the most for the least effort. However, throughout most of history, this was not possible. Even the Romans understood that what was desired by the Gauls would not necessarily work for the Nubians or the Greeks and vice versa. This was the final synopsis for most of the ensuing two millennia. However, the times are changing. And according to many business prophets, the world is finally becoming one with itself” (Herbig, 1988, pp.31). This shows that international marketers around the globe face a very complex situation in deciding to choose between standardization and adaptation as internationalization strategy. The author is of the view that jigsaw puzzle of standardization and adaptation can be solved by admitting that both are not mutually exclusive strategies and marketers can use the combination of both by adapting where it is necessary and standardizing where possible. In order to prove this a brief overview of the academic literature is discussed in the first section. In the second section factors affecting adaptation and standardization are discussed with few examples from corporate settings. In the last section a framework is discussed which can be used by managers in order to strike the right balance between standardization and adaptation.

2. Literature Review:

2.1 The question of standardization and adaptation in international marketing is a long debate and has extended over the period of more than half a century now. Much of the research in international marketing is devoted to whether companies should standardize or adapt when operating in a globe. Krolikowska and Kuenzel (2008, pp.383) stated “debate on advertising standardization versus adaptation has received extensive coverage over half a century. It has attracted contributions from academics (Agrawal 1995; Britt 1974; Buzzell 1968; Pae, Samiee and Tai 2002; Sheth

1978) and practitioners (Elinder 1965; Fatt 1967; Killough 1978); it has been researched empirically (Duncan and Ramaprasad 1995; Griffith, Chandra and Ryans 2002; Harris 1986; Vrontis 2003) and discussed conceptually (Harvey 1993; Jain 1989; Miracle 1984; Papavassiliou and Stathakopoulos 1997) and has used practical examples from real-life advertising practices of multinationals such as Coca Cola and Nestle (Quelchand Hoff 1986; Sorenson and Weichmann 1975)"

3. Adaptation verses Standardization

3.1 There are three schools of thoughts on the said debate i.e. standardization, adaptation and contingency perspective. In order to give a verdict on whether adaptation is more trouble than it is worth a review of discourse of adaptation and standardization is essential.

3.2 The debate on standardization verses adaptation started in 1961 with Elinder's idea that world is becoming more and more homogeneous due to which advertising can be standardized (Vrontis ,2003). Elinder (1965) further argues Media and mobility of consumers within the continent is evening out the differences in terms of living standard and consumption habits, which is enabling Organizations to practice standardized advertising approach. However it is interesting to note that Elinder only talks about advertising approach but the underlying assumption is that the product is similar in all markets. This argument and its underlying assumption opened the debate of standardization.

3.3. Buzzell (1968) took this idea and applied the notion to other elements of marketing mix by stating that advertising cannot be seen in isolation to other element of product mix. In order to gauge the effect of standardization, the remaining 3p's: product, price and place must be taken into account as well. Buzzell further explained that standardization offers benefits like cost saving, better planning, control and consistency in consumer dealing. He argued that practitioners are overlooking the convergence of consumer behavior by following the adaptation strategy.

3.4 Levitt (1983) in his famous article stressed that well managed companies had moved from an emphasis on customizing items to offering globally standardized products that are advanced, functional, reliable and low priced. Levitt further argued that technological innovations and increased access of consumers toward media is blurring national boundaries and regional preferences. He stated that increased mobility of masses is bringing the world together and homogenized it into a consistent market with analogous consumption pattern and desirability of products and services. Levitt believes that market segments in a particular market are not unique, but share commonalities with other segments elsewhere: *"Everywhere, everything gets more and more like everything else as the world's preference structure is relentlessly homogenized"*(pp.6)

3.5 Levit (1983) presented the view that this convergence in consumer behavior is a great opportunity for global organizations to standardize their product and benefit from economies of scale. The evidence supporting Levit's proposition is considerable. For example Moscow subways are filled with English language ads. Russian stores sell Coca-Cola; P&G promote Pampers diapers worldwide with the same slogan for all 56 countries: "Even when they're wet, they're dry." (Herbig, 1998)

3.6 The basic assumption underlying adaptation is that global companies can only enhance their probabilities of success by adapting to different cultural realities within which they wish to play. (Friednam, 1986) The proponent of adaptation criticized standardization in many ways says Lipman (1988) argues that globalized marketing theory itself is bankrupt. He posited that cultural and other differences are still prevailing and marketing a single product everywhere in a consistent manner can trigger customers negatively towards the brand, alienate employees and the organization can lose sight of actual consumer need.

3.7 Consumers in different countries speak different languages and there is huge amount of difference in legal system across the border. Moreover there are factors such as climate, economic conditions, race, topography, political stability and occupations which put constraints on the global company to adapt. One of the most important factors which limit the firm's ability to standardize its culture. People across the board differ in their national history, education, religion, values and attitudes, manners and customs, and perception of products. (Van Mesdag, 1987)

3.8 Now we will look into the third and final phase of the discussion on the debate which states that neither standardization nor adaptation single handedly enable foreign companies to win the game in the local marketplace. The proponents of the "adapt/stand" approach believes that it is not a mutually exclusive strategy, it can be seen as wide spectrum and companies can refer to this spectrum in their international marketing decisions. The issue is not of standardization or adaptation, the real issue is which elements of marketing mix can be standardized and which must be adapted (Buzzel, 1968). Prahalad et al. (1986) and Douglas et al. (1987) further developed the idea by arguing that International marketers must search for the right balance between adaptation and standardization. According to them, decisions on standardization and adaptation are not a dichotomous one. Papavassiliou and Stathtakopoulus (1997) coined the phrase "adapt where necessary and standardize where possible", which was further tested by Vrontis et al (2009) by analyzing the experience and behavior of UK multinational companies. It was concluded that companies can be arranged on a linear continuum with standardization on one extreme and adaptation on the other. In their analysis of internationalization experience of multinational companies they observed that International firms can neither be adherent to pure adaptation nor pure standardization.

4. Discussion:

4.1 We can see that the statement, adapt where possible and standardize where necessary does not give any policy guidelines for practitioners and managers. We must consider the factors which influence firm's ability to standardize. By looking at the consumer behavior literature it is evident that factors such as economic conditions, political conditions, culture, legal setting etc. significantly effects the consumer behavior and indirectly effects the decision of whether to adapt or not. In the next section of the text factors that influence the adapt/stand decision is discussed.

5. Culture and Adaptation

5.1 Culture is defined as a "complex set of beliefs, values, norms and attitudes acquired by consumers as part of their national heritage and transmitted by learning process"(Britt, 1974. p 43). Culture is defined by many authors in many ways. Elements of culture vary according to different authors as well, but this is not a point of concern in this writing. The point which is of pivotal concern in adapt/stand decision whether culture is heterogeneous or homogenous. Hofstedian school of thought argues that countries can be categorized on the basis of different dimensions and every country varies in its culture (Hofstede, 1980). However critics of Hofstede says that due to increased communication and globalization culture is becoming a dynamic entity and people share almost the same value and lifestyles (Holden, 2004).

5.2 The impact of culture on marketing practices is very deep rooted and we can see culture not only influencing companies to adapt its product offerings but it also pushes companies to even exclude some of the product offerings from its product line. We see that food chains like KFC, Subway, Nandos etc cannot sell chicken and its products in Muslim countries if the chicken is not halal. Even in cities like London, these food chains have adapted their product offerings in Muslim Community areas by including Halal Chicken in the ingredients in order to make it religiously acceptable. Take the example of Nokia in western countries. Nokia handsets do not have any "AZAN" application and it does not include Islamic Calendar, whereas in Muslim countries we can see Nokia handsets marketed with "AZAN" and other religiously related applications.

5.3 MTV's Global Expansion: MTV's global expansion got off to a weak start when it targeted the whole world with single feed and hired English DJ's around the globe. Whether it was in India or it was in Western Europe, consumers across the globe negated this idea and many local copycat channels emerged and took the advertisements and viewership away from MTV. After that MTV managers were forced to give respect to local needs and hired Hindi DJ's in INDIA, Urdu DJ's in Pakistan and also broke Western Europe into eight regional feeds. This localization push enabled MTV to regain its viewership across the globe. (International Business, competing in the global market place, 5th ed: Charles W.l.Hill pp-409).

5.4 But there are cases in which a product or a concept was not initially accepted by the consumers of the society but with the passage of time and due to increased communication it became acceptable and successful, e.g. dating websites and marriage consultants were initially seen as indecent in South Asian societies because arranged marriages were socially more acceptable. However, today the attitudes of parents are changing and they encourage their children to choose their partner without any obligation.

6. Economic Conditions and Adaptation

6.1 Economic conditions also affect the firm's strategy to launch standardized version of the product or to adapt it. Economic conditions are generally measured in terms of GDP, debt burden of a particular economy, purchasing power and disposable and discretionary income of consumers in the society. All of these measuring criteria pushed international marketers to think in terms of product levels and convinced international marketers to launch stripped down versions of the products in developing economies, e.g. Toyota's decision to sell cars with fewer features in developing nations like Pakistan as compared to developed nations like the US. The underlying rationale behind the decision was per capita income, which is lower in Pakistan as compared to US.

7. Legal Framework and Adaptation

7.1 Another factor which inhibits a firm's ability to standardize its product offerings is country's legal framework. Legal framework constitutes legal obligations which a foreign company has to follow in order to operate in a particular economy. Legal restrictions can push companies to adapt specific products e.g. a country might want a foreign company to use local raw materials in order to protect their local industry. These type of restrictions might force companies to modify their marketing mix decisions such as use of local distribution chain rather than setting up own distribution channel.

7.2 Legal settings might affect advertising decisions i.e. how to advertise and which products to advertise publicly. One cannot advertise to children in Denmark because it is legally prohibited. France and Germany allow only corrective advertising. There are other examples as well in which countries do not allow comparative advertising (Papavassiliou and Stathakopoulos, 1997).

7.3 Legal settings also effect packaging decisions as well. For example: packaging laws in Saudi Arabia require all the international brands to show ingredients in Arabic language. Legal setting also affects the product or service delivery mechanism. In Pakistan sale of liquor in open market is illegal and government permit is needed in order to sell alcohol. Therefore, all five star hotels like Marriot, PC and Sheraton excluded wines and spirits from their menus and they can only sell liquor to foreigners.

8. Governmental Orientations and Adaptation

8.1 The role of political environment and government policies has been discussed in the literature with respect to entry decision but it has not been discussed with reference to adapt/stand perspective. Political environment of a country can have an immense impact on marketing mix for global corporations. Jain (1989) explained that sometime carefully selected markets lose their attractiveness to international brands due to governmental interference in order to cope with local political pressures. Jain further commented that sometimes governments ignore economic realities when it comes to price setting and give more importance to public pressures for setting low prices. Government regulations can also hinder the firm's ability to do business with continuity e.g. when mad cow disease broke out in the US the Japanese government put a ban on American beef which meant Mc Donalds had to stop the sales of Hamburgers in Japan and launched a Japanese version named teriyaki burger made with local ingredients.

9. Consumer Characteristics and Adaptation

9.1 Consumer can be categorized on the basis of age, sex, income, and psychographics and according to consumption characteristics. These variables force international marketers to adapt because consumers differ along these characteristics in different economies, e.g. lifestyle of a consumer in Pakistan cannot be similar to the life style of American consumer. Papavassiliou and Stathakopoulos (1997) stated that consumers across the globe differ in their product preference and in terms of attributes selection.

10. Advertising Framework and Adaptation

10.1 Advertising infrastructure includes all the institutions and subsidiaries that are required to run advertising process smoothly. It consists of functions such as availability of media, availability of technical equipment, local advertising and human resource. Different aspects of advertising framework can have implications for firm's global strategy (Harvey, 1993). For example, a company might want to reach target audience through TV advertisements in all regions, however, it may be pushed to use print media because of high cost for TV advertisements in a particular region.

10.2 These factors force marketers to adapt their product offerings in order to exploit opportunity that exists in foreign markets. The factors discussed above do not only affect product decisions but it also hampers the firm's ability to standardize other elements of marketing mix. Managers can assess markets on these factors in order to decide where to adapt and where to standardize. The answer to the question whether adaptation is an overly expensive option and is more trouble than it's worth, author is of the view that solution lies somewhere between the two poles. Neither standardization nor adaptation solely help marketers to compete around the globe. It is evident and accepted that standardization offers economies of scale, firms can lower their production costs but at the same it comes with the risk of

overlooking clear differences within the market. However, adaptation enables companies to cater to the local needs more effectively but it can increase the firm's production dramatically.

10.3 Apart from the external factor there are some intrinsic factors as well which affect the decision to adapt or not such as management philosophy, company's approach to internationalization and its objectives and capabilities. The author argues that managers must standardize where cultural and other psychographic differences are not very much subtle in order to gain from economies of scale and where markets are not very much similar adaptation is required in order to gain long term market share.

11. How to Strike the Balance?

11.1 The factors discussed above can be a good starting point in policy decision but due to the inherent ability of these factors to change rapidly, managers are faced with complex situation in corporate setting i.e. to find the perfect balance between the two extremes.

11.2 Many frameworks have been introduced so far and international firms can refer to those in order to decide where to adapt and where to standardize. Majority of these frameworks focus on market communication and ignore other elements of marketing mix.

11.3 One of the frameworks that is more elaborative and takes into account all the elements of marketing mix was presented by Vrontis et al (2009). They included the three more Ps i.e. People, Physical evidence and process management in the traditional marketing mix. According to them there are 11 factors that can be a reason for firms to adapt. These are Market development, Economic differences, Culture, Differences in customer perception, Competition, Technological, Sociological, Differences in physical conditions, Legal / political, Level of customer similarity and Marketing infrastructure. They clearly differentiated between reasons to adapt and reason to standardize and come up with 6 reasons to standardize as well, which are Economies of scale in production, research and development and promotion, global uniformity and image, consistency with the mobile consumer, easier planning and control, stock costs reduction and synergetic and transferable experience.

11.4 The model enables international marketers to critically analyze and evaluate the market and serves a torch bearer in order to determine which elements to standardize and which to adapt. Vrontis et al (2009) claimed that companies can arrange themselves on a linear continuum on the basis of suggested framework.

12. Conclusion:

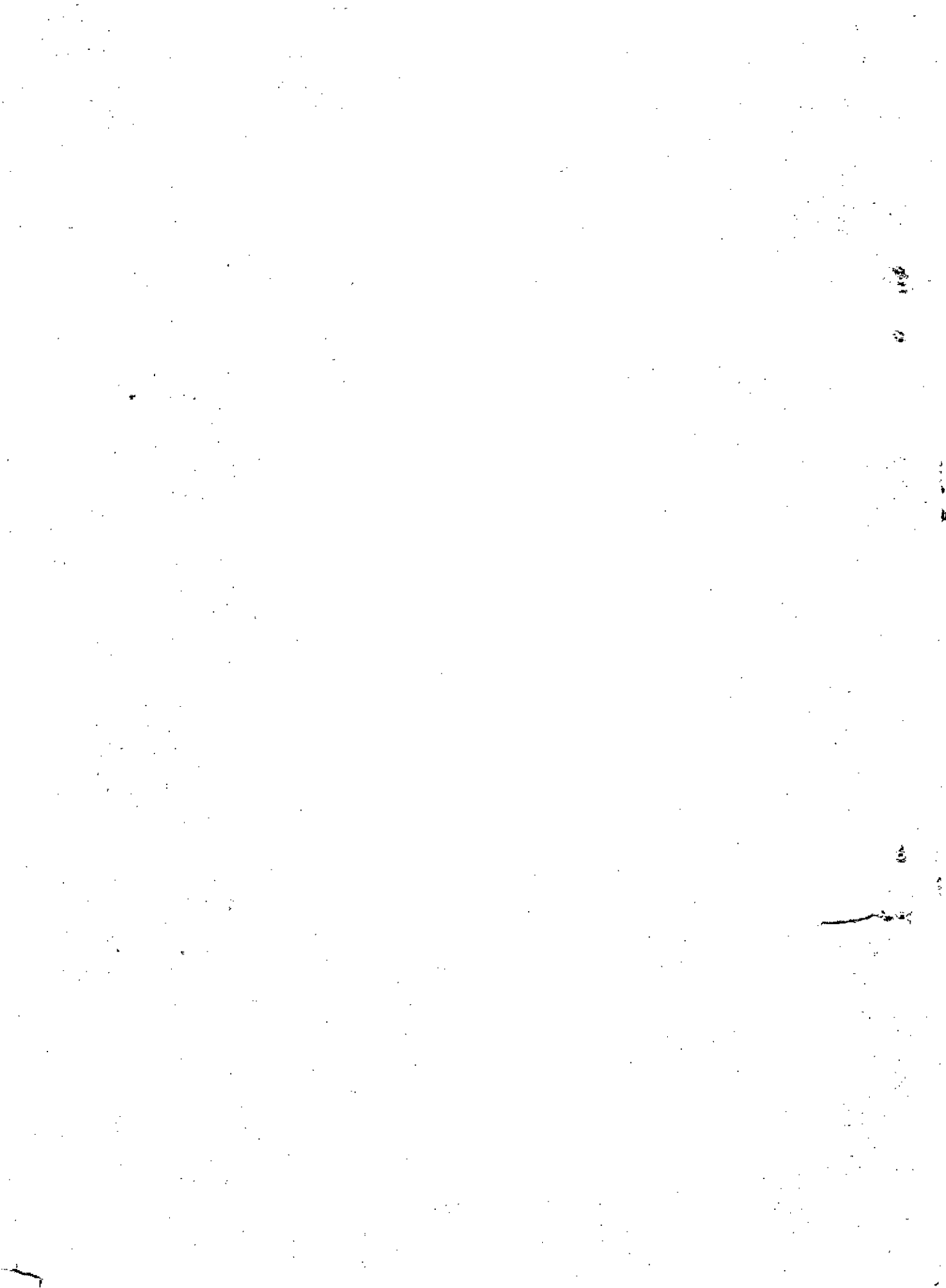
12.1 We can conclude from the foregoing discussion that neither standardization nor adaptation solely enables marketers to compete effectively in this ever changing corporate world. It is not a matter of adaptation being overly expensive or standardization being cost effective; it is a matter of finding the right balance between the two extremes to design a winning strategy. The underlying reason is marketers need to bear opportunity cost if they choose a single strategy and ignores the other, e.g. if a company decides to go with standardization only, it lends the risk of losing market share because some of the consumers may fail to relate the product. However, if a company adapts only, it will not enjoy the benefits of economies of scale as a result production cost can increase and local competitor can outsmart it. Therefore, best strategy can be made by adapting where possible and standardizing where necessary.

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AGRICULTURE CREDIT: THE WAY FORWARD

By

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Abstract

Agriculture Credit is an important unit of public goods which is very instrumental in increasing overall productivity. Presently credit market comprises of formal and informal components having their own advantages and disadvantages. Since supply of institutional credit to agriculture sector like other sectors of economy is a responsibility of the government so several suggestions have been made to increase the present share of agriculture credit in total portfolio of banks operating in Pakistan.

1. Introduction

1.1 The framework for economic development of Pakistan 2011 mainly emphasizes the larger role of private sector in handling commercial affairs of the country with no exception to agriculture sector. Regulation dealing provision of credit to businesses is an important responsibility domain of the government being vital instrument in increasing overall productivity. The importance of credit in agriculture sector is established as it enables farmers to acquire command over the use of working capital, fixed capital and consumption goods. Many studies have shown positive relationship between agriculture credit supply and overall productivity of the sector. In recent years, the credit requirements as well as disbursement have increased for both inputs for crop production and farm investment. But there are issues which are hampering to meet the need of sector since the major share of the credit is supplied by the informal sources.

2. Agriculture Credit market in Pakistan

2.1 Formal Credit

2.1.1 Agricultural Financing can be bifurcated into two main categories. Farm Credit includes "Production Loans" for inputs like seeds, fertilizers, pesticides, including working capital finance whereas "Farm Development Finance" is used for improvement of agricultural land, orchards, construction of storages, purchase of agricultural machinery and equipment like tractors,

threshers, etc. The other category of Non-farm credit includes financing for Livestock, Dairy, Poultry and Fisheries etc¹

2.1.2 Agriculture finance is the major component of rural finance which also includes retailing, wholesale activity, rural SMEs (Small and Medium Enterprises) etc. The neglected side of rural finance is mobilization of rural savings and access to insurance for various risk mitigating purposes which are also important for accelerated agricultural development.

2.2 Policy Approach to Rural Credit

2.2.1 Three policies in particular have a critical impact on rural financing, namely: agricultural sector policy, financial sector policy and macroeconomic policy. Interestingly, there is no institutional home and composite repository of rural finance policy and documentation within State Bank which has been advocating a shift from a traditional supply-led directed credit approach to more market-oriented, demand led financial services.

2.3 Legal Framework & Structures

2.3.1 Agriculture Credit Department of State bank of Pakistan is responsible for assessing and determining the requirements for agricultural credit in the country as well as coordinating with the different federal and provincial departments of major agricultural credit disbursing agencies like ZTBL, FBC, commercial banks and designated private banks. The Agriculture Credit Advisory Committee (ACAC), established in 1972, chaired by the Governor of the State Bank, works to ensure financing to the agriculture sector though the targets have become indicative and hardly any penalty is imposed on a bank for not meeting its target. State Bank's Prudential Regulations for Agriculture Financing (2005) are considered only as minimum standards for the banks/DFIs aimed at ensuring placement of appropriate management information system and diversification of agricultural portfolio. Banks are encouraged to extend agricultural credit on the basis of future cash flows, instead of sole reliance on the collateral. Banks are advised to set suitable margin requirements to manage the credit risk and to encourage external expertise to streamline the issues of valuation of security.²

¹ Rural finance policy in Pakistan,2008,commissioned by Pakistan Microfinance Network
² Prudential Regulation for Agriculture Financing,2005,State Bank of Pakistan

2.3.2 Pakistan's agricultural credit market consists of formal lenders which include specialized banks like Zarai Taraqiati Bank Ltd.(ZTBL) and Punjab Provincial Cooperative Bank Ltd (PPCBL),commercial banks and Micro-finance institutions.

2.4 Institutional History and Analysis of Operational Effectiveness

2.4.1 Government has been taking measures to direct resources to target groups and sectors of the economy through setting up of mandatory targets for the agriculture sector. Land Improvement Loans Act of 1883 (LILA) and Agriculturists Loan Act 1884 (ALA) streamlined the sanctioning and regulation of interest carrying Taccavi loans, financed through government treasury and disbursed to needy farmers for seeds, fertilizers etc, by revenue agencies. A major step after independence was the establishment of two specialized institutions i.e. Agricultural Development Finance Corporation and the Agricultural Bank in 1950s. Subsequently, these institutions were merged to form the Agricultural Development Bank of Pakistan (ADBP) in 1961. Banking reforms in 1972 led to mandatory agriculture financing by commercial banks under threat of penalties.

2.4.2 The Cooperative Credit Societies Act of 1904 introduced cooperative credit system which was designed to compete with non-institutional sources of agriculture credit. Through enactment of Co-operative Banking Ordinance, 1976, the "Federal Bank for Cooperatives" (FBC) was established to finance provincial cooperative banks for further lending to cooperative societies. Subsequently, default of the provincial cooperative banks and a number of fake cooperative societies with gross under performance led to liquidation of FBC in 2001, followed by liquidation of provincial cooperative banks' except PPCBL.³

2.4.3 ADBP was mostly run as just another Government Department rather than as a Bank. By the end of 2002, it had accrued huge defaults ranging from 30 percent to 45 percent of its total loan portfolio in the agriculture sector. Ultimately, it was converted into a public limited company and renamed the Zarai Taraqiati Bank Limited (ZTBL) in 2002 with enhanced paid up capital, clean balance sheet and a leaner structure. The revamping of supervised agricultural credit scheme in 2001, led to induction of fourteen new Domestic Private Banks in the Agricultural Loans Scheme. In spite of restructuring of ZTBL, there is little indication of an improvement in its

³ Rural finance policy in Pakistan,2008,commissioned by Pakistan Microfinance Network

performance as the organization has been used as a subsidy delivery vehicle by successive governments, resulting in constraints for CBs in rural/agricultural credit market. Rural poor have been paying 20-30 % mark-up charged by Micro Finance institutions like the National Rural Support Programme (NRSP) and the Khushhali Bank (KB).

2.5 Status of Formal Credit

2.5.1 At present there are 58% branches designated for agri. credit in the country while 48% of them are located in urban centers (Table1). In year 2010-11 an amount of Rs. 263 billion (Figure 2) was disbursed. The relative share of agriculture credit in overall portfolio has been squeezed over time. Compared to the sector's performance its share has remained around 5% of the total disbursement (Figure 4). It is evident that credit disbursement substantially increased during 2006-08 contrary to the cost of production. The momentum, however, lost the pace from 2008 onward in spite of increasing cost of production. It could be linked with high money supply with the banks aggressive campaigns and decrease in interest rates. It also sufficiently answers that there is no problem of absorbability with the agriculture sector. Five big commercial banks have 53% share in total credit disbursement. There is a big distortion as per geographical distribution as Punjab has 86% share. It appears to be justified by the fact that Punjab has big share in total agriculture coupled with capacity of the farmers to meet the procedural requirement. In some districts there is no borrower. Farm sector share is 67.9% compared to nonfarm sector. It has come down from 82.6% in 2006-07 and is continually going down. Small farmers are not getting formal loan to the extent of their presence in the country. With regard to the collateral, the amount disbursed on the basis of passbook (57%) is decreasing. Credit recovery is 90.5%. At present non performing loans are 17.9% amounting Rs. 32 billion. A declining trend in number of borrowers has been continuing for the last many years⁴.

⁴ State Bank of Pakistan, Planning Commission

Table:-1. Access to agriculture credit branch network: 2012

Provinces	Total Branches			Designated for Agri. Credit			%
	Rural	Urban	Total	Rural	Urban	Total	
Punjab	1586	2472	4058	1355	1294	2649	65
Sindh	378	1078	1456	330	281	611	42
KP	460	444	904	313	203	516	57
Balochistan	121	142	263	76	35	111	42
AJK	221	99	320	118	48	166	52
NA	9	5	14	5	0	5	36
Pakistan	2775	4240	7015	2197	1861	4058	58

Source: State Bank of Pakistan

Figure: 1. Agricultural credit disbursement :2010-11

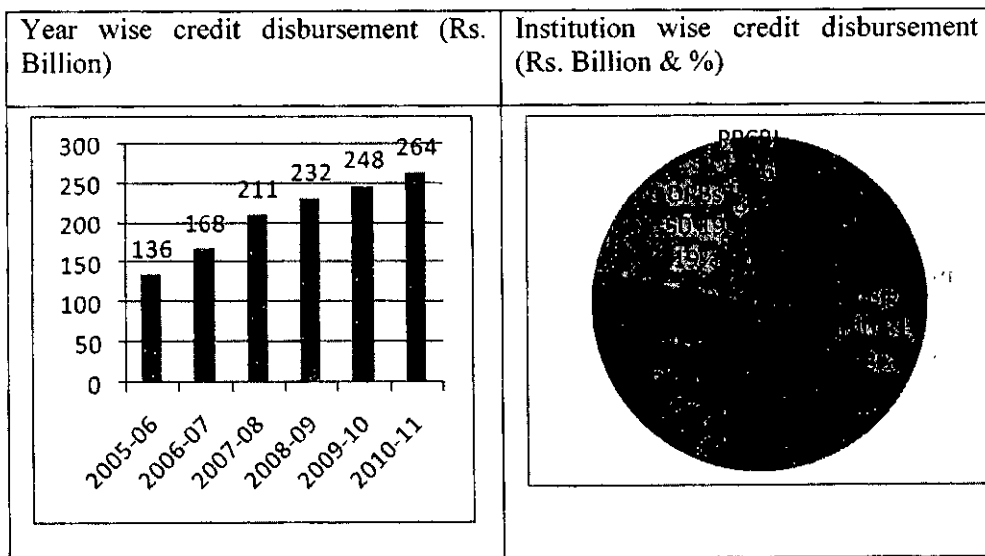


Figure 2: Increase in credit disbursement and cost of production from 2005-08 and 2008-11

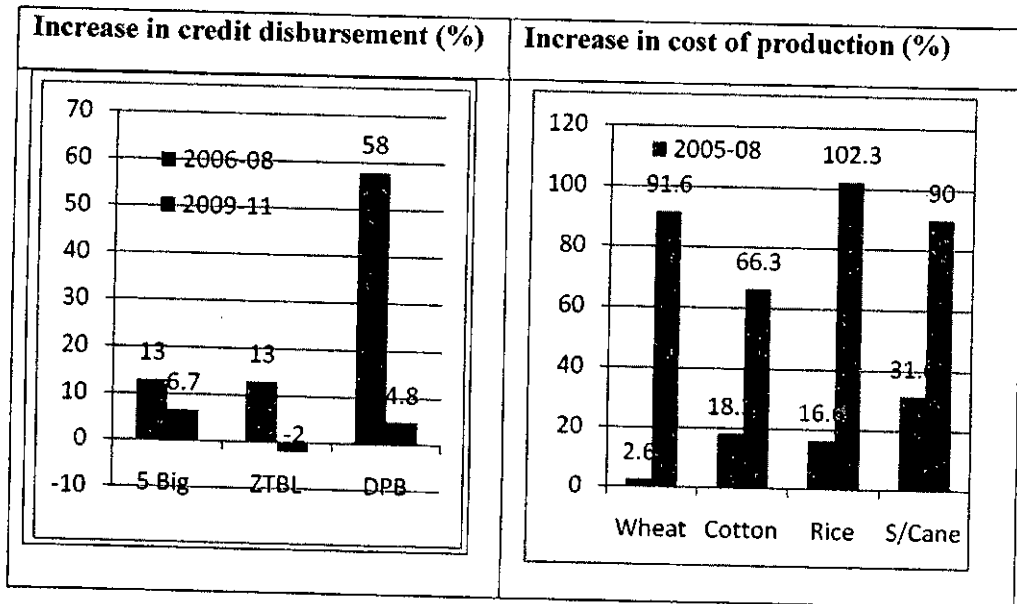


Table 2: Province wise-indicative agri. credit targets and disbursement (2010-11)

Province	Target (Rs.Bil)	Disbursed (Rs. Bil)	Achieved (%)	Share (%)
Punjab	210.6	224.5	106.5	85.3
Sindh	37.8	30.5	80.6	11.6
KP	16.2	7.0	43.3	2.67
Balochistan	4.0	0.24	6.0	0.09
AJK/GB	1.3	0.78	58.3	0.3
Total	270	263.02	97.4	100

Source: State Bank of Pakistan

Table-3: District access to institutional credit (2009-10)

Farmers Getting Loan	Punjab	Sindh	KP	Balochistan	Total
Data not available	1	6	4	4	15
No borrowers	-	-	9	7	16
Up to 1%	2	4	13	18	37
1.1-5%	3	7	5	1	16
5.1-10%	17	2	3	0	22
10.1-15%	7	3	1	0	10
15.1-20%	5	1	0	0	6
Above 20%	1	0	1	0	2

Source: State Bank of Pakistan

Figure 3: Share of farm and non farm sector in disbursement:2006-7 to 2010-11 (%)

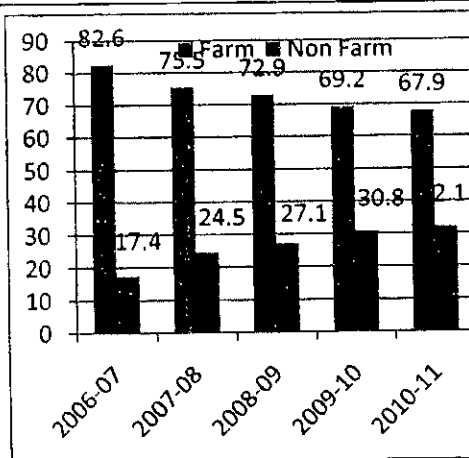
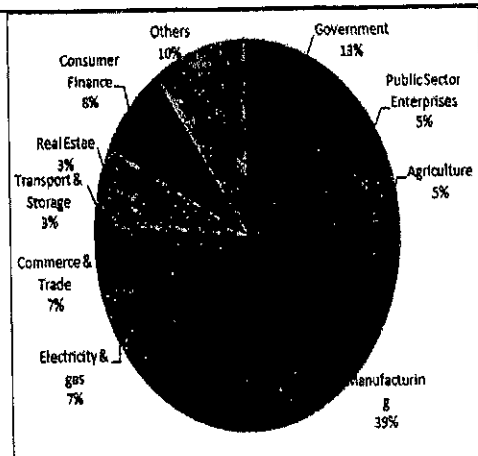


Figure 4: Banks lending to different sectors (2010)



Source: State Bank of Pakistan

Table 4: Collateralized banking - Security wise disbursement (%)

Security	2007-08	2008-09	2009-10	2010-11
Passbook	63	62	60	57
Personal security	1	1	1	2
Property	15	16	7	8
Pledge	13	10	12	16
Others	9	11	20	17

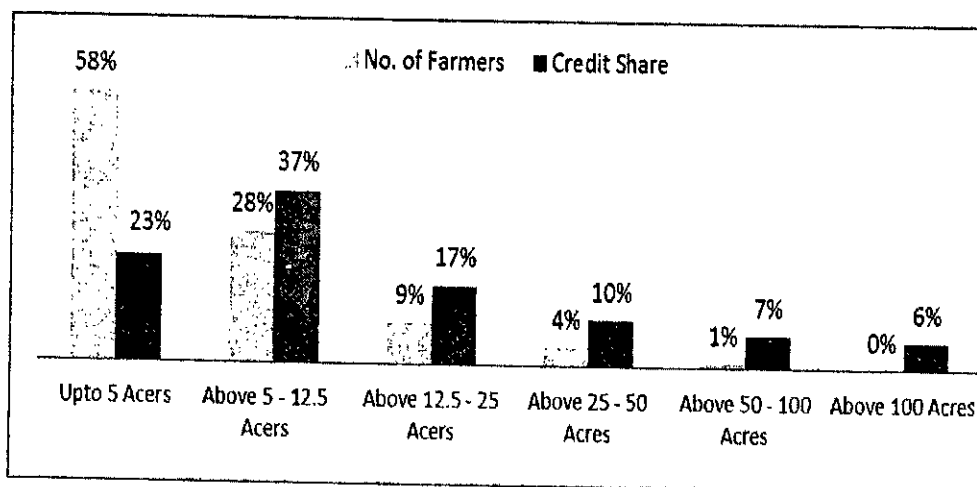
Source: State Bank of Pakistan

Table 5: Agri. credit recovery and non performing loans 2010-11

Banks	Recovery (Rs. Billion)	% of Outstanding amount	Non Performing Loan (Rs. Billion)	% of outstanding Agri. loan
5 Big Banks	134.7	88.6	6.9	11.3
DPBs	51.1	117.5	3.7	15.9
ZTBL	72.3	83.8	19.4	21.6
PPCBL	7.3	63.6	2.4	34.2
Total	265.5	90.5	32.4	17.9

Source: State Bank of Pakistan

Figure 5: Holding wise farmers profile against credit disbursement:2010-11



Source: State Bank of Pakistan

3. Issues in Access to Agriculture Credit Market

3.1 Collateralized banking and economies of scale

3.1.1 The 'collateral' in banking business is the key default risk mitigant, effectively excluding a large number from the purview of credit beneficiaries. Limited quantum of subsidized loans leads to rationing. Access to land is extremely skewed in favour of big landlords and CBs find it costly to serve geographically stretched small farmers. The collusion of large farmers with the bank generally results in credit appropriation to non-

eligible group, defeating the purpose of disbursement of under-priced credit meant for the small farmers.⁵

3.2 Growing gap in demand and supply with regional and distributional disparities

3.2.1 The agriculture credit demand has been estimated at Rs 679 billion against the availability of agriculture credit of Rs 263 billion in the financial system, showing a shortfall of Rs 416 billion (61%) during year 2010-11. Out of it, ZTBL disbursed 24.8%, five commercial banks 53% and rest by other players. Credit is highly concentrated in crop sector (production loans 75%), and there is an uneven geographical distribution with more than 80% of the credit going to the province of Punjab.

3.3 Agriculture credit is not a business of choice for financial markets

3.3.1 Agriculture credit is only 5 % of the credit portfolio of banks, reflecting lack of ownership and commitment of financial markets, along with non-availability of innovative lending products. Banks are risk averse due to intrinsic involved. Moreover, difficulties in auction of attached collaterals, lack of automation of land record, growing ratio of non-performing agriculture loans (Rs. 32.4 billion) owing to culture of write-offs/waivers further complicate the situation. Systemic risk for bank is enhanced due to agriculture sector's susceptibility to risks on account of natural hazards, unreliable infrastructure, insufficient & improper marketing mechanism, low quality of seed and low yield per acre.⁶

3.4 Role of public sector in credit availability and agriculture productivity

3.4.1 The improvement in agricultural productivity is the function of allocative and productive efficiency to be achieved through product and process innovation. Public sector has vital role in provision of effective agricultural extension system, well-coordinated marketing system for both agricultural inputs and outputs and adequate rural infrastructure which can

⁵ An Examination of Challenges and Prospects of Microfinance Sector of Pakistan, European Journal of Economics, Finance and Administrative Sciences, ISSN 1450-2275 Issue 31 (2011)

⁶ The Impact Of Farm Credit In Pakistan, Shahidur R. Khandker, Rashidur R. Faruquee, World Bank

attract private sector investments in the agriculture sector. Over the last thirty years, the institutional credit in real terms has expanded at a higher rate. The relationship between the credit and the agricultural value addition was found to be positive but weak and below expectation. The main factor behind the limited contribution of the credit to agricultural growth was the concentration of the bulk of the institutional credit in the hands of medium and large farmers.

3.4.2 The vulnerability of financial institutions in existing liquidity constraints, amid post-floods high rate of non-performing loans has seriously compromised the ability of credit institutions to continue playing vital role in agriculture sector development.

3.5 Procedure and conditions for availing agricultural loan from banks

3.5.1 Applicant must be a genuine farmer/tenant. Farmer's name must appear in revenue record and a tenant should establish this fact through a government acknowledgement or the applicant must be handling Farm and Non-Farm activities like livestock, poultry, dairy farming, fishery, forestry or firms/ cooperative societies/self help groups undertaking agriculture related activities. The borrower should be holder of computerized N.I.C in cases of individuals. The borrower should not be a defaulter of any Bank/Financial Institution.

3.5.2 Applicant must produce proper securities/sureties/passbook or other collaterals acceptable to the banks. Loan is for 1 to 7 years depending upon the product with mark-up payment frequency quarterly/half yearly for working capital loan up to minimum landholding 10 acres for tractor financing.

3.6 Problems in Agriculture credit facility

3.6.1 The location of banks is not easily found by every farmer. Loan facility is not based on merit system; it is rather based on favouritism. There is problem in banks/DFI that corruption of revenue department cause the great influence in its performance. They have to find *pitwari* for advancing the loan. Govt. influence also effect the performance of banks, as govt. influences the Bank to provide loan to those who has government favour. This may cause some bad effect as they are not eligible for loan.

4. Informal Credit

The informal sector in the rural economy has a longer history than the formal sector in this part of the world. One can notice the growth of formal sector in agriculture credits in the recent times but the balance is yet tilted towards the informal sector.

4.1 Players in the informal market

4.1.1 There are a large number of informal financial markets in rural areas and each generally operates singly without the links that characterizes well integrated financial markets. In Pakistan almost 70% of agricultural credit market is still served by this informal sector. The key players in this informal agricultural credit are *Aarties*, the Suppliers of inputs like pesticides, fertilizers etc., professional money lenders and big landlords, beside friends and the relatives. The loans demanded could be seasonal loans relating to seeds, pesticides etc. or developmental loans relating to purchase of tractors, implements etc.

4.2 The target market

4.2.1 For division through inheritance, the land is being fragmented and the holdings have become small. This segment of small farmers for various reasons discussed later is attracted to the informal market. The tenants and *Thakidars* (contractors) being landless are also not served by the formal sector. The defaulters of bank loans may also like to benefit from the credit offered by the informal market.

4.3 Characteristics of informal credit market

4.3.1 The informal sector is marked by peculiar characteristics. It is neither regularized nor subsidized. The loans are made without any collateral and generally do not have fixed upper limits. The interest rates are very high and vary from person to person. The repayments are tailored to the customer needs and administrative costs are almost non-existent.

4.4. The reasons of existence of informal credit markets

4.4.1 The reasons for existence of such a huge market in the informal sector could be divided into two broad categories, i.e. the farmer specific and the bank (formal sector) specific. In the farmer specific reasons, the prime most is that the formal sector is not readily available to cater the demand in the rural areas and the farmer is thus attracted to the informal sector. The prevailing illiteracy among the farmers leads them to avoid the cumbersome

procedures of formal loans. The access to formal sources is more difficult and the collateral demanded keeps them away from the formal sector. Apart from it the instant availability of loan is a big advantage in the informal sector and the formal sector can hardly compete in this regard. The element of secrecy of transaction between the parties also serves as a big incentive to the former as obtaining of the loan may be considered to damage the so called "social prestige" in our rural cultural values. Another convenience for the former is the trust between the two parties being already prevalent between them.

4.4.2 The reasons of existence of this informal market, being related to formal sector are that it caters only 30% of the market. The concept of rural banking could not find roots in Pakistan and the banks are working with a predominant urban mind set. Their products are not designed for the rural areas and the consumer loans are not available in the rural areas. In fact it is convenient for the banks to approach a few industrialists to sell their products, instead of approaching thousands of farmers. There can be other reasons like instant availability of loans, no procedures involved and a high level of reliability. The flexible rescheduling of loans also remains a big factor for the continuation of the informal sector.

4.5 Whether a fair system?

4.5.1 In spite of its existence for centuries, and serving the needs of farmers, the system cannot be referred to as a just and fair system. The interest rates are very high, at times more than 100% of the loans. The lenders like *Aarties* may not like the repayment in cash and may make forward buying of the crop at a rate of their choice, much lesser than the prevailing market rate. The farmers are sometimes asked to get seeds / pesticides/ fertilizers from some specific supplier and the rate may be higher than the market or the quality is inferior. Another aspect is that the lender exerts social and political pressure on the borrower at the time of elections or other such social events.

4.6 Future prospects

4.6.1 There is no doubt that the farmers have to pay a higher price when availing the facility from the informal sector however, it remains a fact that for the obvious advantages, the market is still capturing a dominant share. There is no chance of a change until and unless our formal sector comes with innovative ideas, design their products to the requirements of the farmers and

start extending loans without the collaterals to the farmers on the basis of personal or group guarantees.

5. Experience of Other Countries

Rural financing is an important area for every country irrespective of their level of development. It is very important to look into their way of handling of agriculture related financing. For the purpose the system of India and USA was studied and is discussed below.

5.1 India

5.1.1 India considers the rural credit as an important catalyst to keep the rural economies thriving. The history of rural credit in India is long and practices evolved over a period of time. The economic status of people and the culture of middlemen have given birth to formal and informal lending systems.

5.2 Formal lending Institutions

5.2.1 Rural credit markets during the postcolonial period remained at the centre of policy intervention in India. The institutional arrangements⁷ include Reserve Bank of India at top level, followed by National Bank for Agriculture and Rural Development (NABRAD). Under the guidance of NABRAD commercial banks, rural cooperative credit institution and regional rural banks operate to disburse rural and agriculture credit. Commercial banks are playing a lead role having 59% share in total rural finance. Share of agriculture credit in rural finance is around 6%⁸. Inter farm and inter regional disparities exist in Indian formal credit market. Efforts are being made to increase credit disbursement through new schemes such as Service area approach, Mandatory lending scheme, Self Help Group, Kissan Credit Card scheme.

5.3 Cost of agricultural credit and credit gap

5.3.1 In India the commercial banks charge rate of interest on agricultural credit varying from 9 to 11.5 per cent with respect to short-term loan amount that ranges from Rs. 50,000 to Rs.25, 00,000. However, the rate of interest charged on long- term loans ranges between 9.5 to 12 per cent for other agri. loan. The formal financial institutions in India extend credit facilities only to

⁷ Reserve Bank of India, News Bulletin 2004

⁸ SS Acharya 2004

those who are able to complete the documentary requirements such as collateral and personal surety for ascertaining the ability to repay back. Thus, completing the process for acquiring the loan requires the borrower to visit a number of offices and collect documentary evidence, which generally involves transactions other than the officially prescribed fee. Such additional expenditure gives rise to transaction cost. The default rate 8-46% shows poor recoveries of Indian agri. credit market. The credit gap estimate for India is 54 per cent. Thus, the non-fulfillment of the credit demand for agricultural sector by the financial institutions has generated space for the informal lenders to thrive in rural economy.

5.4 Informal lending institutions

5.4.1 This space has been filled by the informal (non-institutional) lenders to deliver credit at the doorsteps of the borrowers. The informal lenders, even in the presence of formal lenders in the rural credit markets, continue to expand business and charge very high rates of interest i.e. 38-81%⁹. Informal lenders are usually influential money lenders (mostly commission agents) in India and have business in the grain market, input market and consumer goods market. They essentially tie up one transaction with the other and cater to the needs of the rural production and consumption, which is popularly called as interlocking of markets. The informal lenders have used this mechanism of interlinked agrarian markets to squeeze the borrowers to the maximum possible extent and leaves little surplus with the rural producers and hence the capacity to repay back. Agriculture is highly dependent on nature and is operating under high degree of uncertainty. In the case of crop failure, unemployment, disease and death, the borrowers may not have simply enough money at the time of payments. This kind of default is quite common and leads to indebtedness of the lenders. The extent of indebtedness is 56.3% in Indian Punjab¹⁰. Terms of trade runs against the primary producers reducing the capacity to repay back the borrowed money. This process of double squeeze of the primary producers increases further dependence of the primary producers, in the absence of the capacity to meet running costs, on borrowings for day-to-day transactions.

⁹ Ibid

¹⁰ SS Acharya 2004

6. United States of America

6.1 Modern agricultural production systems are capital intensive, but relatively low-margin segments of the U.S. economy. As such, a large portion of capital used in farming is borrowed. For the majority of commercial-sized producers, credit is necessary to facilitate input purchases and can be a significant cost of production. Farm credit demand has been steady in recent years and creditworthy farmers generally experience competitive lending markets. Low credit worthy farmers approach to subsidized credit provided by the government sponsored, United State Department of Agriculture (USDA)¹¹ through its three agencies i.e. Farm Service Agency (FSA), Rural Development and Commodity Credit Corporation (CCC). USDA provides direct loans and loan guarantees to farmers unable to meet conventional credit standards. Middle level farmers approach to Farm Credit Service (FCS)¹². As a government sponsored enterprise, FCS borrows money from the US Treasury cheaper than commercial banks. In turn, FCS usually loan out money to farmers cheaper than commercial banks.

6.2 The privately owned Federal Agricultural Mortgage Corporation (Farmer Mac), also a GSE, provides liquidity for rural lenders by buying agricultural and rural home loans. Other federal lenders with less prominent roles serving agricultural producers include the Small Business Administration, the Commodity Credit Corporation, and the Rural Business and Cooperative Service. The Federal Home Loan Bank System (FHLBS) also serves as a source of funds for rural lenders. Roughly one-third of the \$180 billion in farm debt at the end of 2000 was held by or guaranteed by the government, through FSA or GSEs. In some regions or for some classes of borrowers, the federal government supplies or supports half of all farm credit needs. Federal credit subsidies may have different objectives, but they all work to lower production costs for farmers and increase access to credit.

6.3 Presently, direct and indirect federal farm credit subsidies are substantial amounting hundreds of millions of dollars annually. In addition to specific farm credit policies, the regulation and supervision of financial institutions, as well as monetary, fiscal, tax, and antitrust policies have a significant effect on the operation of agricultural credit markets.

¹¹ www.usda.com

¹² website: www.fcs.com

7. Crop Insurance

7.1 Agriculture is an open field activity and exposed to vagaries of nature and natural calamities. It is a single transaction business which leaves no hope and chance for redoing in case of any damage. Heavy crop damage, livestock death & asset theft farmers bear income, investment loss and faces acute difficulties in rehabilitation. Under this situation crop insurance provides financial protection to farmers against such risk. World Trade Organization favours governmental support in crop insurance business and has put it under green box, admissible agricultural subsidies. Crop insurance is a risk management mechanism designed to even out agricultural risks and blunt the consequences of natural disasters to make losses, especially to the marginalized farmers, more bearable. Crop insurance serves as a powerful instrument in promoting and adopting modern techniques in agriculture especially by small farmers.

7.2 Mainly there are two types of crop insurance product. One is classic insurance which includes, damage based and yield based products. However in advanced countries new products have been introduced like crop revenue, whole farm and index based insurances.

7.3 The introduction of crop insurance in Pakistan has been under consideration since very long. Many schemes such as ADBP pilot project with a private Insurer: 1986-1988, Insurance Association of Pakistan (IAP) Crop Insurance Scheme: 1990, IAP Catastrophe Crop Insurance Scheme to SBP: 1990, IAP Crop Insurance Scheme (flood/excessive rain only): 1996 and NIC Comprehensive Crop Insurance Scheme-1996 have been introduced. However none of them got success. During the course of this study various reasons have been identified for the failure of the insurance scheme in Pakistan. Those are: non involvement of private sector, high risk in agriculture business, limited availability of reinsurer, non availability of reliable data regarding agriculture business, environment and track record of individual borrowers, high premium and high cost. Lack of experienced work force, cultural issues, small and uneducated farming community are also important impediment in the success of crop insurance business.

7.4 It is observed that crop insurance is not an economically viable activity. It functions well until involvement of government and becomes non viable as soon as government do away. Crop insurance as such is a difficult preposition. Mostly countries have introduced crop loan insurance instead of crop insurance. State Bank of Pakistan with consultation of stakeholder developed a comprehensive crop loan insurance framework which is summarized below in given table.

Table: 2. Crop Loan Insurance Framework¹³

Item	Coverage
Operational Jurisdiction	All Banks and insurance companies registered with SECP
Premium:	Max 2.0% plus levies
Max. loan limit Insured	Max. Rs. 2,000,000 in an individual case.
Crops covered:	All crops
Perils covered:	Excessive Rain, Hail, Frost, Flood, Drought and Crop related diseases like viral and bacterial attacks or damage by locusts
Period of Insurance:	From time of sowing or transplanting till harvesting
Indemnity:	If 50% insured standing crop is damaged by the perils covered in calamity notified areas by the Govt.
Reference Yield	Three years average of the particular area
Main Exclusions	War, Terrorism, riots, non or wrong utilization of loan, earthquake etc
Special Condition	Max limit of liability in any one year to be 300% of the premium

Source: State bank of Pakistan

7.5 It is now mandatory to have crop loan insurance for all agriculture credit disbursement in Pakistan. Under the above given framework financial institutions has introduced their crop loan insurance products through insurance companies working in Pakistan. For example, ZTBL has introduced scheme with Adamjee Insurance. In this 50% cost of the premium will be provided by the government for small farmers¹⁴. Introduction of crop loan insurance scheme will be beneficial for all three parties i.e. farmer, bank and insurer. Bank's finance will be secured from threat of default, Insurance Companies will get business and Borrower will get big and unrestricted money. After introduction of this scheme loan has become secured. One must hope that mark up on agriculture credit will go down.

¹³ SBP Task Force on Crop Loan Insurance Framework

¹⁴ ZTBL website: www.ztbl.com.pk

8. Finding and Conclusion

8.1 Review and critical appraisal of the whole agriculture credit market, both formal and informal suggest following challenges which actually hampering credit disbursement in the country.

- 8.1.1 Agri. credit only 5 % of credit portfolio of banks compared to 6% mandatory agri. lending.
- 8.1.2 Banks meeting about 50 percent of credit requirements
- 8.1.3 Inadequate outreach: 58% bank branches designated for agri. credit and 44% located in urban areas of the total branch network.
- 8.1.4 Inadequate access:
 - a) Borrowers 27 % of total farmers
 - b) 16 Districts with no borrowers, 37 districts with up to 1% borrowers, 16 Districts with 2-5% borrowers & 22 Districts with up to 5-10% borrowers.
- 8.1.5 Uneven credit distribution
 - a) Geography wise: 86 % in Punjab
 - b) Farm size wise: Small farmers are getting less
- 8.1.6 High agri. credit lending rates because of its high cost and defaults rate
- 8.1.7 Absorbability is not a problem. The key is the bank's campaign and interest rate.
- 8.1.8 Non-availability of innovative lending products from banks.
- 8.1.9 Procedural issues: dilatory procedure involves for credit disbursement.
- 8.1.10 Collateral Problems: Unclear land titling and non existence of collateral. Value of collateral is also questionable.
- 8.1.11 Crop insurance is mostly successful under governmental support.
- 8.1.12 Other countries are providing cheap loans to medium and small farmers.
- 8.1.13 Non-computerization of land record: Cause delay and promote corruption.

9. Strategic Interventions

9.1 The appraisal of existing policy, institutional and legal framework and efficacy of operational model has led to formulation short term and long term strategic interventions, summarized as under:

9.1.1 Recognizing tenancy:

- a. A system of issuance of tenancy passbooks to be introduced through Revenue Department by maintaining proper entries and regular updating of revenue record
- b. Local revenue officials to be authorized to issue cultivation certificates to tenants

9.1.1 Preparation of data base of tenants :

The revenue officials of the Provincial government to develop expertise and competence to:

- a. Identify the predominant clusters of tenancy cultivation.
- b. Build up data and continuously update the data on tenants at district level
- c. Conduct awareness camps in association with CBs/ZTBL to pursue tenants to approach banks for credit rather than private money lenders at high interest rates.
- d. Formation of District Consultative Committee (DCC), on analogy of Indian model, including district administration, line departments, banks and public representatives to facilitate the process of identification and preparation/review of the list of tenants in the districts.

9.1.3 Adoption of traffic signal strategy:

- a. Conducting electronic profiling of 1.8 million existing beneficiaries (farmers) of Agriculture credit facilities based on their credit history
- c. Farmers to be placed in green, amber and red boxes accordingly, earning incremental advantages such as enhancement in credit limit etc as per SBP's determined criteria

9.1.4 Facilitating information of small farmers group (Tenants):

- a. Counseling and persuasion to form Joint liability groups (on analogy of Bangladeshi and India model and in line with SBP model of group lending without collaterals) through revenue officials and reputed NGOs
- b. Special Scheme for marginalized farmers to be introduced along with strengthening of existing portfolio for this group (up to Rs.100,000) where mark-up is picked by the Government ,discretely, through intermediation of Agriculture Extension Departments and Agencies.

9.1.5 Disbursement of agriculture credit through community program

Utilizing social collateral of farming community for subsidized credit disbursement to farmers through formation of groups with the help of NGOs and Rural Support Program(RSP) which has developed social capital in 54 districts of Pakistan by organizing the communities

9.1.6 Bringing mark-up parity with industrial credit

SBP to intervene for parity of agriculture credit mark-up parity with industrial credit as recovery statistics have improved after introduction of crop loan insurance scheme.

9.1.7 Predominantly small farmer centric agri credit system

Bifurcation of agriculture credit system where big farmers (largest beneficiaries of subsidized lending) to approach to the commercial banks while ZTBL to be exclusively meant for small farmers on subsidized rates

9.1.8 Mandatory lending

Enhancing the agriculture lending limits from 6% to 10% of total credit portfolio where banks are required to deposit their shortfall in lending to agricultural sector to ZTBL thus promoting agriculture credit disbursement

9.1.9 Credit guarantee fund:

Higher risk perception is key impediment in extending credit to tenants. Constitution of Credit Guarantee Risk Fund by contribution from all stakeholders viz., Federal Government, Provincial Government, Commercial Banks, etc, is essential to remove the risk perceptions and ensure need-based credit to the tenants.

9.1.10 Improving financial literacy of tenants:

- a. CBs/MFIs/ZTBL to run credit counselling centres for farmer's education on agriculture credit services, repayment planning and crop productivity
- b. Ensuring farmer's access to market and logistical linkages through dignified treatment
- c. CBs to operate vans to enhance financial literacy to remote areas through audio-visual message in vernacular in the shape of short movies

9.1.11 Extending credit to corporate / companies for onward financing to farmers :

- a. Corporate involved in procurement of agricultural produce for processing and /or exports to be provided subsidized credit for onward lending to tenants for purchase of inputs etc.
- b. Financing through big sugar mills for on-ward lending to farmers to save them from high interest rates of informal credit market

9.1.12 Effective utilization of services of NGOs-MFIs:

Supervised role of NGOs-MFIs in undertaking financial intermediation well-established in areas of higher credit demand

9.1.13 Computerization of land record & clarity about encumbrance status of land

Ensuring computerization of land records through NADRA and devising mechanism to bring clarity about titles of properties (specially un-partitioned pledged holdings) to curb corrupt practices of revenue staff

9.1.14 Production of innovative lending products

Product guidelines should be developed including agriculture supply chain, value addition/ processing, orchard and green house development financing.

9.1.15 Inadequate delivery channels/outreach

Branch network of banks is inadequate causing problem of outreach. Adequate branches should be established coupled with using information technology as mobile phone banking.



PRODUCTION AND ACREAGE RESPONSE OF WHEAT GROWERS IN PAKISTAN

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Abstract

This research investigates the Production and acreage response of Pakistani wheat growers and their economic implications are considered in terms of the existences and nature of production lags, and the choice between expected wheat and gross returns as the preferred explanatory of producer's response to changing economic condition. Data were collected from 1961-2008 by using time series analysis and data were analyzed by using SPSS-16.5 version. The analyses indicate that there are lags which are due primarily to the difficulties and cost of rapid adjustment rather than to the time required to revise expectations. The statistical results were similar for the alternative specification of gross margins and wheat as the economic decision available. However, the wheat elasticities derived using the gross margins specification were about a third of those using the wheat specification. The paper used data by using the time series analysis of Wheat response analysis. A longitudinal in depth study is needed for the decision analysis. The gross margin specification yielded additional information in the form of yield and input cost elasticities. The clarified concept of Wheat response analysis presented. Also, the systematized factors are introduced and tested empirically.

Keywords: Supply, Response, Wheat, Growers, Rural area

1. Introduction

1.1 The actual prices and their lag prices may be expressed either in enumerative currency (Rao and Shrama et al, 1999) Thailand, India, Chad are the main competitors of Pakistan (Shaikh et al) The government of Pakistan is taking effective measures to increase the yield, production and quality of wheat exports. Research efforts are continuing on developing high yielding varieties of wheat. Emphases are also being laid on agronomic research as well as on improved extension services, fertilizer use, direct seedling etc. The flow of input and credits is also being substantially increased. The research was investigated with the objectives to determine the

factors that affect the supply of wheat in Pakistan, and to estimate the short run wheat elasticities of wheat in Pakistan.

1.2 Agriculture is the largest sector of Pakistan's economy. The agriculture sector contributes around 20 percent in GDP, and engaged half of the total employed labor force. It is the largest source of foreign exchange earnings and meets raw material needs of country's major industries such as textile and sugar production. The growth in the agriculture sector increased from 0.6 percent to 1.2 percent in the current year. A feature of improved growth in the agriculture sector is record production of wheat and recovery in cotton. Improved growth in agriculture sector is attributed to the government's agricultural policy reforms such as waiving of interest on loans, introduction of Khushali banks, support price policy of wheat and introduction of micro credit facility. The growth is also attributed to timely measures to get cotton out of deep-seated crisis (*et al S.M.Nasir*) Wheat is the principal food and commercial crop and occupies about 37% of the total cropped area. The total cropped area under the wheat during the year 2010-11 was 8905 thousand hectares, and production was 24214 thousand tones

2. Theoretical model and Dynamic Supply Analysis

2.1 An agriculture supply function describes how the quantity of the product offered for sale varies as varies relative to other product wheat (Cochrane 1995). Cochrane distinguishes between supply function response. The supply function describes the quantity, which would be supplied at different wheat's with all other things constant, while the supply response relationship describes what will happen to the quantity supplied when all other things are not held constant. Nerlove (1958) provided much of the theoretical frame work in the supply response studies, and (*Rao J.M et al 1999*) of the response analysis of agricultural commodities.

Let the supply equation be

$$Q_t = a_0 + a_1 P^* + a_2 Z_t + \dots \dots \dots (1)$$

Where Q_t = Quantity produced in time t

P = Actual price of wheat

P^* = Expected price wheat

P_{t-1} = Lagged Price of Wheat

Z_t = Supply shifters

D_t = Dummy variable

2.2 The expected wheat is not observable and is explained as expected 'normal' wheat, i.e., the level about which the future wheat is expected to fluctuate. This can be expected as:

$$P^* - P^*_{t-1} - \beta(P_{t-1} - P^*_{t-1}), \quad 0 \leq \beta \leq 1 \dots \dots \dots (2)$$

Assume $\beta=1 = P^* = P_{t-1}$

2.3 We can get the following equation by getting the value of P^* from equation (2) and substituting it into equation (1) and rearranging it,

$$Q_t = b_0 + b_1P + b_2P_{t-1} + b_3Q_t + b_4Z_{t-1} + b_5Z_t \dots \dots \dots (3)$$

The equation (3) can be estimated econometrically.

2.4 To estimate elasticities the formula used was $\partial Q / \partial P$. P/Q the first term for short and long run will be

Short run $\partial Q_t / \partial P_{t-1}$ and Long run: $b_1 / 1 - b_2$

3. Analytical Model and Method of Estimation

3.1 The main interest of this study is the response of total planned output to a number of variables, because the planned output is an unobserved variable so time series data on planned output are not available. Hence a proxy of actual output has to be used in analyzing the response of planned output of wheat to variation in its wheat. The second analysis in this paper is done by taking the acreage under wheat a dependent variable. Area is concerned to be a reasonably good proxy for production so long as it is a major input. The main objective of supply response studies is to analyze the movements in the intended acreage to wheat changes. The actual acreage may not reflect the intended acreage due to certain constraints (Lim, 1975). Necessary time series data over the years 1975-2005 were collected from the secondary sources.

4. Variables included in Econometric Model.

4.1 Production of Wheat (QR_t)

4.1.1 Dependent variable was total production of wheat in Pakistan. The time series data of wheat production were collected from different sources.

4.2 Acreage under Wheat (AW_t)

4.2.1 Acreage under wheat in Pakistan was taken as a dependent variable in the acreage response model. Time series data were collected from government publications.

4.3 Lagged Wheat of Wheat (PW_{t-1})

4.3.1 The data on wheat of wheat were collected from 1975-2005. The lagged value of wheat has direct relationship with production and acreage under wheat t . Therefore, the coefficient of this variable should have a positive sign.

4.4 Lagged production of Wheat (PW_{t-1})

4.4.1 This variable is expected to have a significant impact on production of wheat in year t . This variable was expected to have a positive sign.

4.5 Lagged acreage under of Wheat (AW_{t-1})

4.5.1 The lagged acreage under wheat also has a positive impact on the acreage under wheat in year t . The variable has a positive sign.

4.6 Lagged production of Cotton (PC_{t-1})

4.6.1 The lagged wheat of cotton has an inverse relationship with production and acreage under wheat because the cotton is competitive crop. Therefore the coefficient of this variable was expected to have a negative sign.

4.7 Dummy Variable (D_t)

4.7.1 Due to war with India, a dummy variable for the year 1975-2005 was added to adjust the disruption to agriculture production. The coefficient of this variable was expected to have a negative sign for production and acreage under wheat.

4.8 Mathematical form of the Model

4.8.1 The following models were chosen among the various mathematical forms on the basis of economic, statistical and econometric criteria.

Production Response

$$QRT = f(PW_{t-1}, QW_{t-1}, PW_{t-1}, D_t, e_t)$$

Acreage Response

$$PW_t = f(PW_{t-1}, AW_{t-1}, PC_{t-1}, D_t, e_t) \text{ where,}$$

AW_t is the total wheat production (000tonnes) in year t.

AW_t is the total acreage under wheat (000 hec) in year t

PW_{t-1} is the wholesale wheat of Wheat (Rs/maunds) in year $t-1$

QW_{t-1} is the total wheat production (000 tonnes) in year $t-1$

AW_{t-1} is the total acreage under Wheat (000 hec.) in year $t-1$

PC_{t-1} is the wholesale wheat of Cotton (Rs/mounds) in year $t-1$

D_t is the dummy variable for war 1965.

e_t is the random disturbance term.

5. Results and Discussion

5.1 The time series for the present study was from 1961 to 2005 and secondary data will be collected for the analyses. The results were obtained by using SHAZAM and its presented in Table-1, and 2.

Production Response

$$\ln QW_t = 2.56 + 0.192 \ln PW_{t-1} + \ln QW_{t-1} - 0.019 \ln PC_{t-1} - 0.258 \ln D_t$$

6. Interpretation of results

6.1 The examination of the co-efficient of determination for production response equation indicated that 96% variation in the production of wheat in Pakistan was explained by the explanatory variable included in the model.

6.1 Lagged production of Wheat (PW_{t-1})

6.1.1 The Coefficient of lagged wheat of wheat had a positive sign with a value of 0.192. The coefficient is significant at 5% confidence level which indicated that with one unit increase in the wheat of the wheat in the last year, the production increased by 0.192 units. The sign and magnitude of co-efficient was according to expectations.

6.2 Lagged production of Wheat (QW_{t-1})

6.2.1 The co-efficient of this variable had a positive sign with a value of 0.653 and was significant at 0.1% confidence level, which showed that lagged production of wheat had a significant influence on the production of the wheat. The size and sign of co-efficient was according to the expectations based on theory.

6.3 Lagged wheat of Cotton (PC_{t-1})

6.3.1 The lagged wheat of cotton had a negative sign with a value of 0.019 and non significant. The sign of co-efficient indicated that lagged wheat of cotton and wheat production had an inverse relationship, as both are competitive crops. The co-efficient is non-significant because cotton has little influence on production of wheat.

6.4 War Dummy (D_t)

6.4.1 The dummy variable represented the war India in 1965. The co-efficient was negative, as was expected with a value of 0.258 and significant at 5 percent confidence level. The negative influence of war on production might be due to non-availability of inputs at crucial stages in the production.

7. Acreage Response

$$\text{Ln AW}_t = 6.8 + 0.096 \text{ Ln PW}_{t-1} + 0.158 \text{ Ln PC}_{t-1} - 0.0936 \text{ Ln D}_t$$

3.1 Interpretation of results

The examination of the co-efficient of determination was 0.9564, which indicated that 95% percent variation in the acreage under wheat in Pakistan was being explained by the independent variable included in the model

7.1 Lagged Wheat of Wheat (PW_{t-1})

7.1.1 The Coefficient of lagged wheat of wheat had a positive sign with a value of 0.0965. The coefficient is significant at 5% confidence level which indicated that lagged wheat of wheat had significant influence on acreage under wheat.

7.2 Lagged production of Wheat (AW_{t-1})

7.2 The lagged acreage under Wheat had a positive sign, according to expectations, with a value of 0.158 and was non-significant. This indicated that scope of horizontal expansion in Pakistan was limited.

7.3 Lagged production of Cotton (PC_{t-1})

7.3.1 The co-efficient of this variable had a positive sign with a value of 0.059 and was non significant. The unexpected sign of co-efficient showed that wheat of cotton had no influence on the acreage of the wheat.

7.4 War Dummy (D_t)

7.4.1 The dummy variable represented the wars with India in 1965 and 1971. The co-efficient was negative, as was expected with a value of 0.094 and a significant at 5 percent confidence level. This indicated that war had a negative impact on the acreage under wheat, which might be due to destruction of irrigation and other infrastructure and non-availability of inputs and other services.

8. Elasticities

8.1 The estimated short-run and long run elasticities for production and acreage response under wheat are summarized in Table.3

8.2 The own wheat elasticity for production shows that with the increase in the wheat of Wheat by 1 percent during the period of analysis, the quantity of wheat production increased by 0.184 percent in the short run and 0.44percent in the long run. In case of acreage response, with the increase in the wheat of wheat by 1 percent during the period of analysis, the acreage under wheat increased by 0.080 percent in the short run and 0.110 percent in the long run.

9. Conclusion

9.1 The “best” model was a log linear form, many variables were not including in the model due to non-availability of data, and important variables are included. The results of the analysis indicate that wheat growers response to changes in the wheat of wheat in the case of production and acreage under wheat response. The lagged wheat of cotton has no significant impact on the production of wheat and acreage under wheat. This may be attributed to the reason that cotton is grown usually in the western areas of Pakistan. The cultivation of cotton is also risky due to the attack of pests. The dummy variable for the war period had a negative impact both on production and acreage under wheat in the years 1961-2005. The co-efficient of lagged acreage was non significant, which indicated that horizontal expansion in area is limited in Pakistan, any increase in production will come through vertical expansion in future. This is a policy implication for government policy makers and researchers with regards to elasticities. The own wheat elasticity of wheat is 0.192 and 0.553 for short-run and long run production response and were acceptable on economic and statistical criteria.

10. References

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Table-1: Structural Co-Efficient, their Significance and Value of R^2 for Wheat Production Response in Pakistan (1961-62 - 2007-08)

Variable	Co-efficient	Standard Error	t-Ratio	
Constant	2.75	0.867	2.948	***
PR _{t-1}	0.192	0.077	2.468	**
QR _{t-1}	0.653	0.1236	5.282	***
PC _{t-1}	- 0.019	0.083	0.23	
D _t	- 0.258	0.103	2.489	**
R ²	0.9674			
R ² (Adjusted)	0.9629			

Notes: *** = Significant at 1 percent level of Significance.

** = Significant at 5 percent level of Significance.

Table-2: Structural Co-Efficient, their Significance and Value of R^2 for Wheat Production Response in Pakistan (1961-62 - 2007-08)

Variable	Co-efficient	Standard Error	t-Ratio	
Constant	6.8	1.043	6.518	***
PR _{t-1}	0.0965	0.0389	2.478	**
AR _{t-1}	0.158	0.128	1.235	
PC _{t-1}	0.0599	0.035	1.67	
D _t	- 0.094	0.0486	1.924	**
R ²	0.9604			
R ² (Adjusted)	0.9564			

Notes: *** = Significant at 1 percent level of Significance.

** = Significant at 5 percent level of Significance.

Table-3: Own Wheat Elasticities for Production and Acreage under Wheat in Pakistan. (1961-62 to 2007-08)

	Production Response	Acreage Response
Short Run	0.184	0.080
Long Run	0.44	0.110

Appendix:

Years	Area under Wheat(000 ha)	Production under Wheat (000 tonnes)	Price of Wheat Rs/mands.	Price of Cotton/mands
1961-62	6639	3814	15.62	16.46
1962-63	4923	4027	14.49	16.88
1963-64	5022	4170	13.78	16.85
1964-65	5019	4162	15.25	15.27
1965-66	5317	4591	16.65	33.34
1966-67	5155	3916	15.18	14.84
1967-68	5344	4335	2290	19.32
1968-69	5983	6418	2026	23.22
1969-70	6160	6618	17.37	24.5
1970-71	6229	7294	17.53	32.42
1971-72	5977	6476	18.27	22.51
1972-73	5797	6890	20.77	24.19
1973-74	5971	7442	21.36	33.33
1974-75	6113	7629	27.54	39.34
1975-76	5812	7673	40.71	49.5
1976-77	6111	8691	39.65	46.36
1977-78	6390	9144	42.37	48.59
1978-79	6360	8367	46.31	79.64
1979-80	6687	9950	51.45	68.12
1980-81	6924	10587	51.88	74.62
1981-82	6984	11475	58	100
1982-83	7223	11304	68.05	139.75
1983-84	7398	12414	71.08	121.23
1984-85	7343	10882	74.66	93.06
1985-86	7259	11703	81.8	100.1
1986-87	7403	13923	86.76	106.08
1987-88	7706	12016	85.89	82.38
1988-89	7308	12675	86.1	105.36
1989-90	7730	14419	94.43	174.52
1990-91	7911	14565	104.52	134.83
1991-92	7878	15684	119.03	107.51
1992-93	8300	16157	139.99	133.26
1993-94	8034	15213	147.53	178.74
1994-95	8170	17002	160	257.37
1995-96	8376	16907	188.71	344.62

Years	Area under Wheat(000 ha)	Production under Wheat (000 tonnes)	Price of Wheat Rs/mands.	Price of Cotton/mands
1996-97	8109	16651	190	400
1997-98	8355	18694	200	423
1998-99	8230	17858	225	450
1999-00	8463	21079	250	700
2000-01	8181	19024	270	760
2001-02	8058	18226	280	800
2002-03	8034	19183	300	440
2003-04	8216	19500	310	500
2004-05	8358	21612	390	550
2005-06	8448	21277	415	500
2006-07	8578	23295	514	650
2007-08	8550	20959	523	1100

SUMMARY OUTPUT

<i>Regression Statistics</i>	
Multiple R	0.767893
R Square	0.58966
Adjusted R Square	0.559636
Standard Error	3477.025
Observations	45

ANOVA

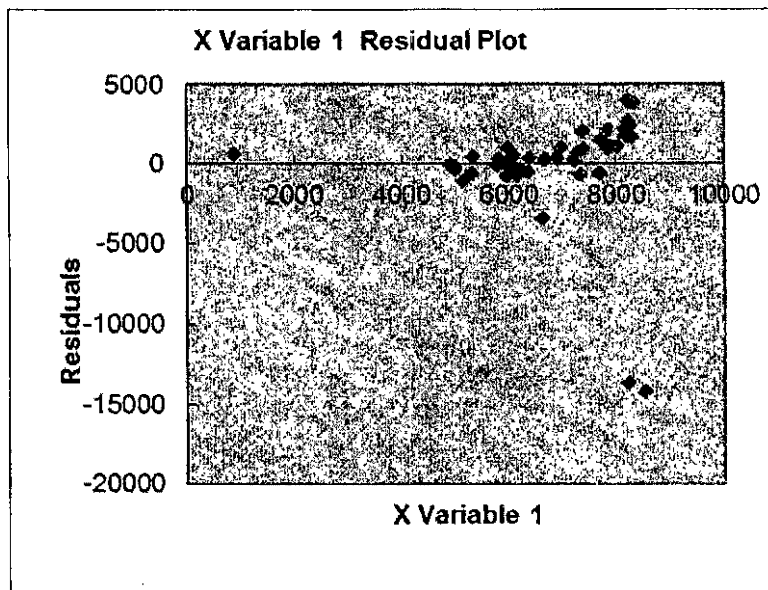
	<i>Df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	3	7.12E+08	2.37E+08	19.63908	4.76E-08
Residual	41	4.96E+08	12089705		
Total	44	1.21E+09			

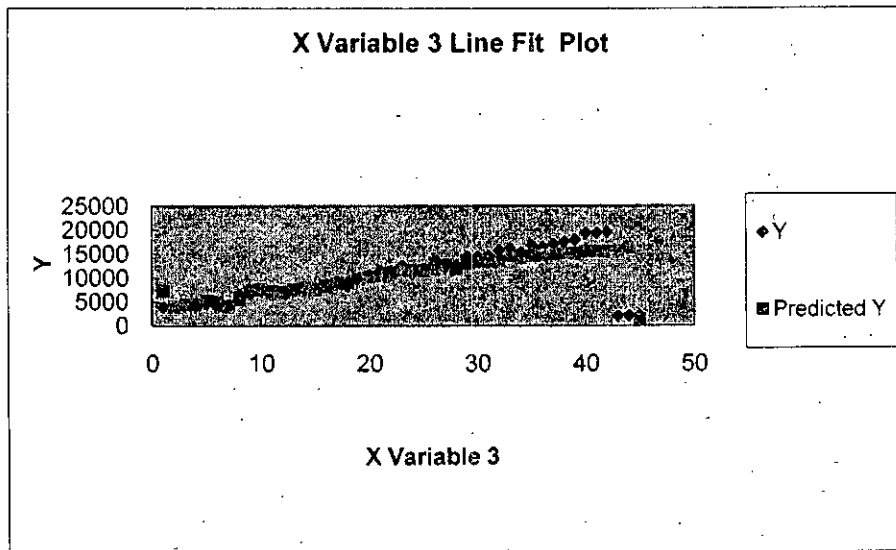
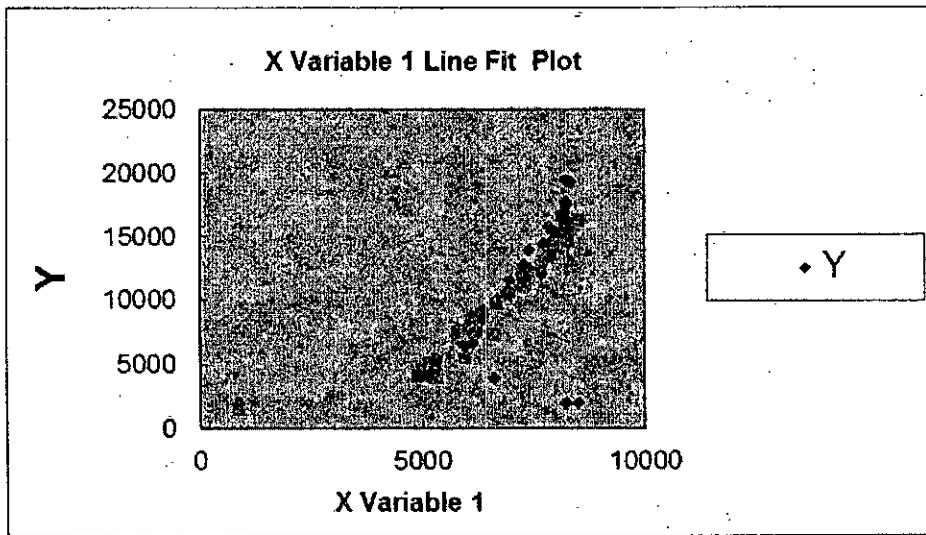
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	-5768.27	2665.794	-2.16381	0.036358	-11151.9	-384.585
X Variable 1	1.954231	0.439955	4.441889	6.61E-05	1.065724	2.842739
X Variable 2	-0.71805	1.198775	-0.59899	0.552478	-3.13902	1.702927
X Variable 3	127.9544	47.78352	2.677793	0.010612	31.45359	224.4551

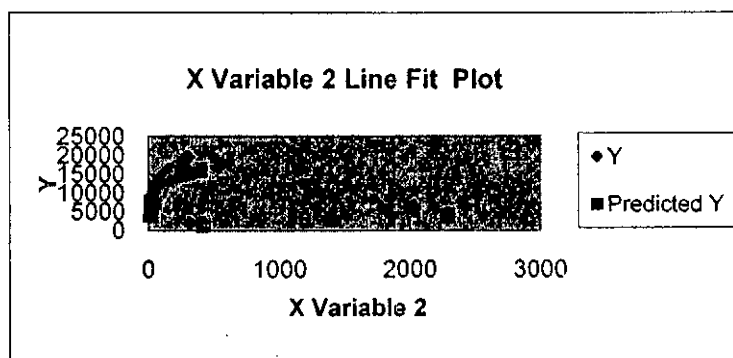
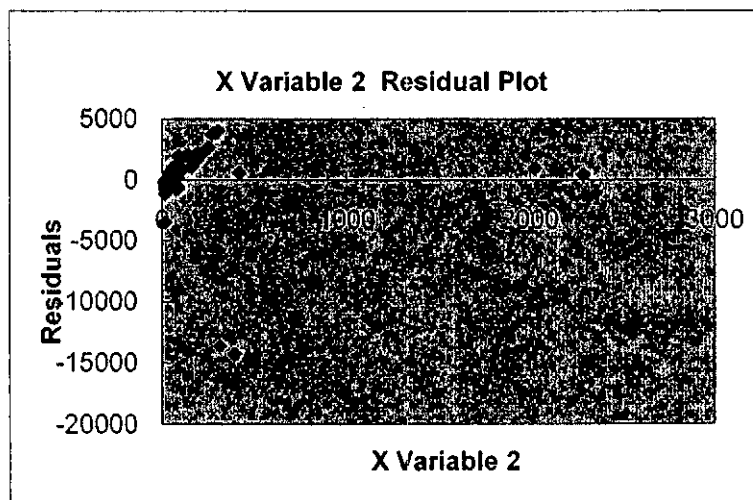
RESIDUAL OUTPUT

Observation	Predicted Y	Residuals	Standard Residuals
1	7322.614	-3508.61	-1.04535
2	4097.919	-70.9192	-0.02113
3	4419.852	-249.852	-0.07444
4	4540.888	-378.888	-0.11289
5	5250.198	-659.198	-0.1964
6	5062.623	-1146.62	-0.34162
7	3926.496	408.5037	0.121709
8	5492.769	925.2307	0.275662
9	7408.916	-790.916	-0.23564
10	7671.597	-377.597	-0.1125
11	7306.554	-830.554	-0.24745
12	7080.952	-190.952	-0.05689
13	7548.519	-106.519	-0.03174
14	7949.536	-320.536	-0.0955
15	7479.81	193.1898	0.057559
16	8192.841	498.1591	0.148421
17	8864.073	279.9273	0.083401
18	8930.571	-563.571	-0.16791
19	9693.868	256.1318	0.076312
20	10284.67	302.3333	0.090077
21	10525.48	949.5196	0.282898
22	11113.28	190.7203	0.056823
23	11581.05	832.9511	0.248168
24	11598.95	-716.95	-0.21361
25	11557.62	145.3781	0.043314
26	11963.42	1959.576	0.583833
27	12684.14	-668.135	-0.19906
28	12034.15	640.8453	0.190932
29	12980.81	1438.187	0.428491
30	13326.26	989.7408	0.294882
31	13572.77	992.226	0.295622
32	13621.19	2062.812	0.614591
33	14568.41	1588.586	0.473301

34	14167.59	1045.411	0.311468
35	14505.53	2193.472	0.65352
36	14714.63	1659.367	0.494389
37	14884.26	1968.737	0.586562
38	15113.47	2303.526	0.686309
39	15127.72	2606.28	0.776511
40	15471.91	3738.087	1.11372
41	15479.34	3840.659	1.14428
42	15481.54	3961.457	1.18027
43	15619.91	-13664.9	-4.0713
44	16276.69	-14288.7	-4.25715
45	1403.596	562.4036	0.167562







AGRICULTURE TRADE OF PAKISTAN

By

Masood Bakhtiar Siddiqui, Chief API

Abstract

The article reviews Pakistan's agriculture trade and concludes that terms of trade in agriculture sector are in favour of Pakistan. It also comments on forth coming Pakistan-India relations and provides SWOT analysis for such trade operations.

1. Introduction

1.1 Pakistan is an agricultural country and Pakistan's economy is an agricultural economy. At the time of independence agriculture sector of the country shared about 50 percent in the GDP. Over the period of 65 years the economic scenario has totally changed. Now agriculture sector shares less than a quarter of GDP. With the development of industrial sector cotton textile, sugar industry, fertilizer industry and other industry in the manufacturing sector occupy more than a quarter share in the GDP. The industrial sector in the economy is generally agro based. Agriculture sector shares only 21 percent of the GDP (Economic Survey 2011-12).

1.2 Agricultural economy has 5 sub-sectors. Namely, major crops, minor crops, livestock, fishery and forestry. Livestock is the leading sub-sector having 55 percent share in agriculture, followed by major crops 31 percent, minor crops 11 percent, fishery 2 percent and forestry one percent. All the sub-sectors contribute their share in the agriculture trade of the country.

1.3 Trade is the phenomenon of buying and selling dollars, when we export certain commodity, we are buying dollars in return of export of that commodity. Similarly, when we import certain commodity we are selling dollars to have that commodity for our domestic use. The process of exporting and importing round the year generates balance of payment. If the foreign exchange through exports exceeds the foreign exchange consumed through imports than the balance of payments is in favour of the country's economy otherwise it is other way round. This paper analysis earnings of the foreign exchange composition of commodities imported in and exported from the country with agricultural origin.

1.4 Pakistan's export trade in agriculture commodities include cotton and its manufactures leather and its made-ups, rice, fruits, potato, onions, chillies, fish and forestry products. Major export markets include USA, UK,

Germany, Hong Kong, UAE, Afghanistan and other countries. Textile, leather, rice exports constitute about 66 percent of total exports. About 45 percent of which destined to USA, Afghanistan, UAE, UK, Germany and Hong Kong. We have emerged as a net exporter of wheat and sugar in recent year. Although Pakistan has an agricultural economy but it still imports edible oil, pulses, sugar, tea, spices, dry fruit and other food items. To satisfy textile industry's demand cotton of required staple length is also imported. Major sources of imports into Pakistan are USA, UK, Germany, Japan, Malaysia, Kuwait, Saudia Arabia and UAE. Major items of imports discussed above constitute about 16 percent of total imports. These sources of imports constitute 50 percent of total imports. Of which UAE and Saudi Arabia alone constitute 25 percent in total imports.

1.5 In 2011-12 (July-April) exports of agricultural commodities shared at \$ 2.8 billion against imports of \$ 2.9 billion. A trade deficit in agriculture commodities is \$ 0.1 billion or 3 percent in first ten months of financial year.

2. Trade Analysis

2.1 Trade constitutes exports and imports. The difference between the two is termed as balance of payments. If we limit ourselves to the trade of commodities of agricultural origin then such balance of payments would be confined to agriculture sector only. Of course goods produced by agriculture based industry are included in it. Although we are an agricultural country but we regularly import agricultural commodities. In this section we analyse the major exports and imports of agriculture origin in Pakistan with the help of time series data.

3. Exports of Agricultural Commodities

3.1 Rice

3.1.1 Among exports of agricultural commodities rice takes lead. This is the commodity we produce for the market. Our production of both basmati and irri rice have captured international markets and have strengthened their hold both by quality and price factors. The trade is expanded in every nook and corner of the world ranging from aromatic basmati rice to the Middle Eastern countries to irri exports to African countries. Pakistan's rice production in 2008-09 was the maximum at 7 million tones while its exports crossed 4 million tonnes in 2009-10. If we have a close look towards the proportion of exports with respect to rice production we come to the conclusion that during the past five years at least 50 percent of rice production was exported. This is indicative of the fact that we should take

better care of our production in terms export market demand as we consume less and export more (Table-1).

Table-1: Production and Export of Rice: 2002-03 to 2009-10

Year	Production	Export	%
	--- Thousand tonnes ---		
2002-03	4478.5	1820.0	41
2003-04	4847.6	1822.7	38
2004-05	5024.8	2891.3	58
2005-06	5547.2	3688.7	66
2006-07	5438.4	3129.1	58
2007-08	5563.4	2809.1	51
2008-09	6952	2729.4	39
2009-10	6882.7	4179.7	61

Source: Agricultural Statistics of Pakistan.

3.1.2 Rice is also our major source of earning foreign exchange. In 2007-08 on-wards we have also crossed \$ 2 billion mark in rice exports which has been translated into more than Rs 100 trillion ranging from Rs 117 to Rs 183 trillion. Exports of basmati rice fetch per unit more price while the export of irri rice in total quantity fetches more foreign exchange.

3.2 Fruit and Vegetables

3.2.1 Fruit and vegetables exports including juices also have significant share in total agricultural commodity exports. Our fruit production was around 6 million tonnes in 2010-11 while maximum export of fruits was about 0.7 million tonnes in 2009-10. Citrus is the major export in fruits. In 2009-10 ratio of fruit exports to production exceeded 11.5 percent. On the overall basis during the past 5 years we have exported about 10 percent of fruit production in the international market (Table-2).

Table-2: Production and Export of Fruit: 2001-02 to 2011-12

Year	Production	Export	%
	--- Thousand tonnes ---		
2001-02	4127	290	7
2002-03	3933	263	6.7
2003-04	4161	254	8.5
2004-05	4963	281	5.7
2005-06	3567	455	8.2
2006-07	4492	343	7.6
2007-08	5529	411	7.4
2008-09	5779	469	8.1
2009-10	5994	687	11.5
2010-11	6026	669	11.1
2011-12	5256	493	9.4

Source: Economic Survey of Pakistan: 2011-12.

3.2.2 We also have an edge in vegetable exports to the neighbouring countries. Our vegetable production including potatoes exceeds 6 million tonnes (2009-10). Maximum exports of vegetables was also in 2009-10 which stand at about 0.5 million tonnes. Vegetable exports generally include potatoes, onion, chillies etc. Total vegetable exports with respect to production was 7.4 percent in 2009-10 while during the past five years it averaged around 5 percent of production (Table-3).

Table-3: Production and Export of Vegetables: 2002-03 to 2009-10

Year	Production	Export	%
	--- Thousand tonnes ---		
2002-03	4826.3	186.3	3.9
2003-04	4966.5	162.5	3.3
2004-05	5073.3	85.5	1.7
2005-06	4692.7	111.9	2.3
2006-07	4705.9	217.6	4.6
2007-08	5675.0	222.9	3.9
2008-09	6155.2	424.8	6.9
2009-10	6186.2	456.5	7.4

Source: Agricultural Statistics of Pakistan.

3.2.3 In agricultural commodities exports of fruits and vegetables share after rice exports in value terms. Earning of foreign exchange was to the tune

of Rs 32 trillion in 2009-10 from fruit and vegetable exports. It was about Rs 20 trillion 2008-09 and averaged at Rs 17 trillion during the last five years.

3.2.4 To encourage fruit and vegetable exports grading and sorting of produce has an important role to play. Moreover proper packaging upto international standards should be practiced so that the commodities reach the end destination in a presentable manner so that they are marketed in the importing country with premium price. For competing in the export markets observance of SPSS measures applicable in the WTO regimes are obligatory which is possible only if we practice such measures in domestic marketing and at farm level produce dispatch.

3.3 Fish

3.3.1 Pakistan is a regular exporter of fish. We have both inland and marine fish catch. Fish production in the country ranges between 0.6 to 0.7 million tonnes. Marine fish is available from Indian sea from Sindh and Balochistan coasts. However inland farming of fish is practiced throughout Pakistan. Fish of both origins i.e. marine and inland catch are exported. Bulk of fish is domestically consumed. However at times about one fifth of fish production has been exported. Highest fish export in quantitative terms were in 2007-08 when more than 132 thousand tonnes were exported which was 20.7 percent of total production of 640 thousand tonnes. The year 2005-06 is significant in terms of highest proportion of exports as country produced some 581 thousand tonnes and exported 128 thousand tonnes which exceeded 22 percent of production. On the overall basis the fish exports never remained below 18 percent of production during last five years (Table-4).

Table-4: Production and Export of Fish: 2002-03 to 2009-10

Year	Production	Export	%
	--- Thousand tonnes ---		
2002-03	637.8	93.2	14.6
2003-04	566.2	103.3	18.2
2004-05	573.5	96.7	16.9
2005-06	580.6	128.5	22.1
2006-07	604.9	123.6	20.4
2007-08	640.0	132.3	20.7
2008-09	685.0	127.4	18.6
2009-10	694.5	106.0	15.3

Source: Agricultural Statistics of Pakistan.

3.3.2 In the agriculture sector exports in terms of value of fish exports play a vital role. In 2009-10 fish exports reached 19 trillion which was about

2 percent of the overall agriculture exports of Rs 1037 trillion. In terms of five year average ending 2009-10 value of fish exports when compared with total agriculture sector exports worked out to exceed 2 percent. Meaning there by that the sector is at least maintaining its share in exports what it has in agriculture sector GDP.

3.3.3 Fish catch has a promising export market particularly in E.U. However the fluctuation in exports of the sector stem from the reservation of EU when they have observed that fish catch in Pakistan can be improved by maintaining cool Chain in a standardized manner right from the fish catch point upto the fish marketing point for export purpose. This would maintain the quality stuff for eating purpose. Such facilities may be developed both at Karachi and Gowader ports for export enhancement.

4. Textile Manufacturing

4.1 Textile manufactures include raw cotton, cotton yarn, cotton cloth, knit wear, bed wear, towels, readymade garments, made up articles and other textile materials. Textile industry is the leading industry of Pakistan. The industry is agro based and also satisfies its manufacturing demand by importing raw cotton of required staple length.

4.2 The industry upto 2011-12 has 1139 mills with installed capacity of 11292 thousand spindles, 7 thousand loom. The industry consumed 3.5 billion kgs of cotton and produced 2.9 billion kg of yarn. Some one billion sq.mtr cloth was produced by the industry.

4.3 In 2009-10 about Rs 670 trillion exports were made by the textile industry which were 65 percent of the total export of agriculture sector of Rs 1037 trillion and 41 percent of total export of the country of Rs 1618 trillions. During the last five years ending 2009-10 exports of textile manufactures averaged 61 percent of total agricultural exports and 37 percent of the total exports at country level.

5. Other Manufactures

5.1 Other manufacturing is lead by leather and leather products, carpets, sports goods, surgical goods, pharmaceuticals etc other manufactured items in terms of value are placed after textile manufactures and rice exports. Their exports are generally in the range of Rs 100 trillion during the last five years. In 2009-10 the exports of these items were maintained at Rs 118 trillion, sharing 11 percent in the agriculture exports and 7 percent in the total exports of the country. For the average of five years ending 2009-10 exports from other manufacture are worked out at 15 percent

of agriculture sector exports and 9 percent of the total exports of the country as a whole.

5.2 The exports from textile industry, leather industry and rice during five years ending 2009-10 is 93 percent of the agriculture exports and 55 percent of the total exports of the country.

6. Value of Exports of Agricultural Commodities

6.1 Total value of exports in 2009-10 is Rs 1618 trillion out of which agricultural exports are Rs 1087 trillion which shared 64 percent in total exports. The major constituents of agricultural exports are textile manufacturing, other manufactures, rice, fruit and vegetables and other agricultural exports which are valued at Rs 669, Rs 118, Rs 32, Rs 19 and Rs 16 trillion, respectively. Their shares in total agricultural exports are estimated at 65, 11, 18, 3, 2 and 1 percent in the order mentioned as above (Table-5).

Table-5: Value of Exports of Agricultural Commodities: 2002-03 to 2009-10

Year	Textile Manufactures	Other manufactures	Rice	Fruits & vegetables	Fish	Other Agriculture	Agri. Export	Non-Agri. Import	Total export
----- Trillion Rupees -----									
2002-03	257.8	76.5	32.4	6.7	7.9	23.4	404.7	247.6	652.3
2003-04	294.6	78.4	36.5	7.7	8.8	16.0	442.0	267.0	709.0
2004-05	321.9	95.5	55.4	7.5	8.3	24.3	512.9	341.2	854.1
2005-06	393.5	107.9	69.3	9.9	11.6	23.6	615.8	369.0	984.8
2006-07	393.5	93.4	68.3	11.3	11.4	13.8	591.7	393.1	984.8
2007-08	399.8	114.2	117.1	13.7	13.3	7.9	666.0	363.3	1029.3
2008-09	333.4	114.1	154.8	19.6	18.5	10.8	651.2	732.5	1383.7
2009-10	669.2	118.0	183.4	31.8	19.0	15.8	1037.2	580.3	1617.5

Source: Agricultural Statistics of Pakistan.

6.2 During the period 2002-03 to 2009-10 the average share of agricultural exports and non-agricultural exports stood at 60 and 40 percent (Table-6).

Table-6: Share of Agriculture Exports in Total Exports: 2002-03 to 2009-10

Year	Agricultural exports	Others	Total
	----- Per cent -----		
2002-03	62	38	100
2003-04	62	38	100
2004-05	60	40	100
2005-06	63	37	100
2006-07	60	40	100
2007-08	65	35	100
2008-09	47	53	100
2009-10	64	36	100

Source: Table-5.

7. Value of Imports of Agricultural Commodities

7.1 Total value of imports of agricultural commodities in 2009-10 is estimated at Rs 671 trillion out of total imports of Rs 2911 trillions. Agriculture imports shared at 23 percent in total imports. Major items of food imports included Edible oil, tea, pulses, spices, sugar, milk, dry fruits and other food items. In 2009-10 total imports of edible oil in value terms are estimated at Rs 155 trillion which shared 23 percent of total agricultural imports. Incidentally the average proportion of edible oil imports during 2004-05 to 2009-10 is also estimated at 23 percent in agricultural imports. It was at peak in 2008-09 when it shared 34 percent depending on rise of edible oil prices in the international market. The overall share of agriculture imports in total imports is estimated 19 percent during the period under review (Table-7).

Table-7: Value of Agricultural Imports 2004-05 to 2009-10

Year	Edible Oil	Agricultural Imports	Total Imports	Share of Agricultural Imports
	----- Trillion Rupees -----			
2004-05	45.0	224.7	1223.1	18
2005-06	44.2	294.6	1711.2	17
2006-07	59.5	344.4	1851.8	19
2007-08	136.8	467.3	2512.1	19
2008-09	138.4	403.3	2723.6	15
2009-10	154.7	670.8	2911.0	23

Source: Agricultural Statistics of Pakistan.

8. Balance of Payments in Agricultural Trade

8.1 During 2004-05 to 2009-10 the period under review the terms of trade remained in favour of agriculture. It was at peak in 2009-10 at Rs 366 trillion and lowest in 2007-08 at Rs 199 trillion and averaged at Rs 278 trillion (Table-8).

Table-8: Balance of Payments of Agriculture Sector: 2004-05 to 2009-10

Year	Exports	Imports	Balance
	----- Trillion Rupees -----		
2004-05	513	225	288
2005-06	616	295	321
2006-07	592	344	248
2007-08	666	467	199
2008-09	651	403	248
2009-10	1037	671	366
Average	679	401	278

Source: Agricultural Statistics of Pakistan.

9. Trade with India

9.1 India has awarded Pakistan MFN status after GATT was reshaped into WTO in 1995. This was the beginning of new trade era in the globe. With the development and strengthening of Pakistan-India trade ties the issue of awarding India the MFN status has gained momentum. It is very much in sight that after successful trade negotiations India would enjoy the reciprocal status of MFN country with Pakistan. Although there was a lengthy list of negative items of trade with India but after a skillful and strategic negotiations the negative list has already been curtailed and after December 2012 negative list would automatically vanish. That practically means that both the trading partners would be enjoying MFN status and there would be a level playing field for the traders of both the countries. Trade would flourish according to ground realities. Technical and non technical barriers in trade would be softened when the flow of goods and services would find their way to their ultimate destinations. It would simply be the case that water is flowing to the directions where it finds least hurdles or removes its hurdles by way of trade force. It would ultimately be a battle of wits and survival of the fittest. It is the culture that resists and it is the culture that survives. The age old bonds between the two would be automatically strengthened by way of revival of trade relations. At the same time we should have rational attitude by observing the national food security at the front. Meaning thereby that imports and exports of products both in and out

side the country should be in a befitting manner so that the economy has the supreme role to play. Here we have the opportunity to perform SWOT analysis with respect to revival of Pakistan India trade. We have seen in the past that shortage of agricultural commodities like potatoes, onions and tomatoes have found their way across the borders whenever the production fell short in Pakistan and in India. Because it is the shortest and cheapest way to make for the deficiency and supply the commodity to the people they need with least time lag.

10. SWOT Analysis

10.1 SWOT stands for strengths, weaknesses, opportunities and threats. Whenever we are going to open up certain avenue of economic importance we always have the option to reach a decision in a logical way by performing certain analysis. SWOT is one of similar tools that provides us way forward. Here we perform the analysis with respect to Pakistan and India trade.

11. Strengths

11.1 What are the strengths involved in trade ties with India. Trade is always economical when performed through land routs. Because land transportation is the cheapest way of trade of goods and services. It provides the commodity to the end user at minimum cost. Both India and Pakistan have the facility to strengthen their trade by way of land routs. In the international scenario we hear the term food miles this commodity has travelled when the end consumer has finally consumed it. Least food miles means least cost and when the food miles are supported by land routs it further reduces the cost towards end consumers. The real strength lies in the indigenous food stuff which is common to both countries due to propagation of local varieties. We have already observed that fruits and vegetables imported from China and other parts of the world does not contain the taste we are used to. As the varieties of fruits and vegetables supplied are genetically modified and have scientific strength. But the end consumer likes the taste he has developed by their way age old eating habits. The facility of strength have stemmed from the fact when shortages of potatoes, onions and tomatoes has been made up in Pakistan by quick imports from India through land routs of Wagha Boarder. There is variety of agriculture commodities which can be exported/imported in hours of need and at minimum cost. Both countries can have to enter free trade agreements and minimize tariff to have level playing field for the trade of goods and services. Availability of imported items within least possible time adds to the strengths in the trade scenario.

11.2 The full strengths of such systems may be observed in European scenario when one can see free flow of goods and services across the borders of neighbouring countries. These people does not have to have any visa or legal document to perform their journey and trade trip. These are the ultimate benefits the trading partners can enjoy with suitable agreements.

12. Weaknesses

12.1 When strengths develop our confidence to go for the possible option at the same time weaknesses caution us to be careful in competitive trade. We have to be vigilant in full filling trade obligations. In international trade the entire process is transparent and hassle free. We have to be particular about timeliness of supply, quality of supply, packaging, forwarding, insurance and other related factors which help the importers to receive the traded item in the best possible way with mutually agreed price. The world has become a global village now a days least cost is not the only factor. The party who can supply the consignment from the one part of the world to the other part within a week will survive as compared to the party who supplies at one fourth cost but takes months to reach the destination. In India Pakistan trade scenario provision of uniform quality standard particularly in agricultural traded goods is the major weakness. If we maintain the grading of commodities in our domestic marketing system it would certainly improve major weaknesses in our external trade. Packaging at international standards also improves/maintains quality of traded stuff. Sorting and grading of goods at farm level can improve the weakness of supplies at international trade level. Weakness in the supply of fruit at export destination particularly of mangoes and citrus has not created good name for the country as the basic SPSS requirements were not met in those export consignments. In the WTO regime observance of SPSS and TRIPS are the key factors to be successful in international trade. These concepts encompass vast meaning for which a detailed discussion is required which is not possible here. To over come the weaknesses is a process that can be taken care off through recursive use of good practices and satisfying demands of buyers and sellers for the betterment of mutual trade and obligations set for it.

13. Opportunities

13.1 The word opportunity sounds well. There is a common saying lucky awaits fortunes. Is not it the right time to take benefit from the opportunities which are opening up with revival of trade with India. Who will take lead in this direction? It is definitely the farmer who would benefit by sorting and standardizing his agricultural produce. Our domestic markets should operate

per available produce supplied by the farmer. The market intelligence in this respect will play a vital role in systematizing the trade in a cogant manner. As and when the Indian commodities would enter in our domestic market our farmer and markets can survive only if they are operating on scientific lines and their products can compete the Indian supplies both in terms of quality and price. Ground transportation would be advantageous to both as India would be operating across the boarder and Pakistani farmer would be exercising from within the country. It would be a level playing field for both of them. The one who meets the domestic demand in a befitting manner would cash the opportunity in his favour. Pakistan is a land of opportunities and for Pakistanis Indian opportunities are also open. Balancing of domestic prices of food stuff within Pakistan has combated cross boarder smuggling. Frequent smuggling of dry dates to India is a regular feature. We can use the trade revival opportunity and channelize the trade to earn trade related revenues at government level.

13.2 We have the socio-cultural ties in the sub-continent. People from both sides of the boarder welcome receiving of goods produced across the boarder. When the goods produced in China can make way in our home due to their intelligent marketing practices then the commodities produced in India at least have an edge due to natural soft corner.

14. Threats

14.1 The term threat does not sound well. No body likes to be threatened. But in this nasty world we have to live with nasty markets. Although we expect the markets to be perfect, but this is not the case. The process of supply and demand makes markets work. Threats to the markets exist which significantly affect both supply and demand of agricultural commodities. In the Indian case the situation is transparent and crystal clear Indian economy is a subsidized economy and Indian agriculture is subsidized agriculture. Take the example of prices of urea and DAP. In India urea and DAP are available at the 50 percent of the price at which they are available in Pakistan. Tubewell water is free in three Indian States including Punjab. Moreover the canal water and seed is also available at discounted prices. As a result over all cost of production of crops is significantly lower in India as compared to Pakistan. The market prices reflect the producing costs. The threat to Pakistani farmer and businessmen exists that how to cope with the Indian exports to Pakistan when prices in Pakistan are high. In the WTO regime we have to be alert to provide homogenous ground for trade. Whether we can exercise the antidumping and counterveiling duties to cope with price disparity when the commodities are dumped below production cost.. In Pakistan fertilizer is subject to 16 percent GST and other agriculture

implements are also subject to GST which raise the cost of production of crops at farm level. The market prices are reflective of those costs. In the current scenario they out number Indian traded prices. Some marketing strategy can be worked out for this complex relationship to cope with the forth coming threats.

15. Conclusions

1. GST should not be levied on agriculture inputs and agriculture machinery
2. Income derived from agricultural production should remain out of tax net as have been exercised in recent budget.
3. To promote agricultural commodities trade sorting and grading be popularized at domestic market level.
4. Standardized packaging for marketing of commodities be introduced to promote exports
5. Proper SPSS related measures be followed at farm at marketing level to satisfy WTO obligations.
6. Due care be made of TRIPS protocols in order to be successful in new trade era.
7. Market access should be maintained by making trade agreement at bilateral and multi national level.
8. Marketing intelligence be made of competing countries in order to remain in export market both at quality and price level.
9. Demands of EU should be meticulously looked into to revive the fish export in these countries.
10. Banking sector may introduce cool chain credit to support the fishing industry.
11. State Bank should revise credit limits of crop sector keeping in view the rising costs of production.
12. Agriculture Insurance be revitalized under government patronage to protect the farm produce from natural calamities.
13. The balance of payments in the agriculture sector remains in favour of agriculture.

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