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Pakistan, Factor 6, Sustainable Agriculture

Pakistan: increasing crop yield, farmer's income and improving environmental conditions by developing and implementing Sustainable Agriculture

Food security is having fine access to the sufficient amount of the food. Food insecurity develops when people are not getting enough food and they are malnourished .The world produces 17% more food than it produces thirty years ago .But close to a billion people go to sleep hungry every night .65% of the world's hungry in only seven countries which include China , India , Bangladesh , the Democratic Republic of Congo. Indonesia, Pakistan, and Ethiopia (source: <https://www.oxfam.ca/there-enough-food-feed-world>).

Pakistan is a developing country and agriculture plays an important role in the economy of the country. However Agriculture sector is facing some serious issues in last few years. A typical farmer's family in Pakistan doesn't live a very pleasant livelihood. A normal Pakistani family consists of eight individuals. In some other cases this number could be decreased by six or could be increased by 12. This number includes parents, children and grandparents.

Due to the large number of individuals in the family with less income, only 1-2 children are able to go to school. Majority of farmers in Pakistan are poor and they live in hand to mouth situation. They are mostly uneducated and some even lack the main knowledge. About 75% of our population is involved directly or indirectly to Agriculture. But the truth is that our farmers are still attached to the subsistence farming. A typical farmer's family consumed a huge portion of food itself due to which less portion of food is available at market.

Small farmers in Pakistan comprise at least three fourth of the total population. They own small land stretches less than 12 acres. Our farmers are also facing issues due to division of land generation by generation (source :www.hamariweb.com/articles/article.aspx?id=53302) .In Punjab and KPK which are two of the four provinces of Pakistan , the average land falls under 5 acres and in Sindh and Balochistan average land falls under 25 acres. Punjab and Sindh having most of the population don't have enough land to support everyone living in this region.

Usually the small land holders and farmers follow the old agricultural practices. They use slash and burn techniques to open a land for farming. Most of them don't have huge areas of lands where they can practice new methods of agriculture and they don't have reliable access to new technology due to their less income. Some farmers use their livestock waste or manure as fertilizers or nutrients for their soil and crop. This method helps them to use the animal waste in a good way.

The income from the farms for most of the families depends upon what they grow and in which amount they grow .The major crops grown in Pakistan are rice, cotton, barley, maize, wheat, cotton, tobacco. There are many barriers a poor family needs to face in order to attain a peaceful livelihood.

These barriers mostly include lack of money, lack of knowledge or illiteracy, lack of knowledge or modern tools and techniques etc. Food sometimes is not considered as a major problem because crop production is good and enough to meet family needs but less income is a major problem.

Factor: Sustainable Agriculture

Sustainable agriculture is basically the production of food, plants and crops by using the methods and techniques that are environment friendly, do not create health issues and work for the welfare of humanity and animals. It also benefits the environment by maintaining soil quality, reducing soil degrading and erosion. In addition to these factors sustainable agriculture increases biodiversity by providing a healthy and natural environment to all kind of organisms.

In terms of agricultural productivity sustainable agriculture helps to maintain food security worldwide by producing more yield of crop in less time. Eventually more production means more crops and more crops mean more food. So this is obvious that sustainable agriculture will help a lot in increasing food production worldwide. In terms of human health, crops grown through sustainable agriculture are better for people. Due to the lack of chemical pesticides and fertilizers, people are not being exposed to or consuming synthetic materials. This limits the risk of people becoming ill from exposure to these chemicals.

Sustainable agriculture also had positive impacts on the environment. One major benefit to the environment is that sustainable agriculture uses 30% less energy per unit of crop yield in comparison to industrialized agriculture. This reduced reliance on fossil fuels results in the release of less chemicals and pollution into the environment. Sustainable agriculture also benefits the environment by maintaining soil quality. (Source: study.com/academy/lesson/what-is-sustainable-agriculture-benefits-and-issues.html)

Sustainable agriculture has a very strong impact on farmer's income. When sustainable farming increases the production of crop yield, farmers would be much benefited from this because they had more crop production and they can sell more and earn more. In this way sustainable agriculture will help the farm families to get out of the circle of poverty.

Sustainable agriculture could really affect a typical farmer's family in Pakistan in a good way. If it is implemented the right way. It can maintain farm household economic security. It can maintain or increase the quality of life for farm and families and workers. It also ensures individual farm business viability and can definitely help farmers to improve their financial situation, health conditions by maintaining better environmental conditions. This will not only bring prosperity but would also help farmers to build a better future for their upcoming generations.

The present situation of Sustainable farming in Pakistan is not so impressive. Farmers are still attached to the old techniques and methods of farming. The main reason for this is that farmers do not have enough financial resources to get modern tools and techniques and to make crop production easy and fast. Secondly they don't have enough knowledge of the new tools so they cannot help themselves with new techniques.

Pakistan needs a boost to its agricultural and rural productivity and incomes if she wants to achieve robust overall growth which cannot be done without using the help of sustainable agriculture. The current situation of sustainable agriculture is improving as farmers are being aware by the benefits of sustainable farming. But it will require intensive efforts to manage lands, soil, water and energy more sustainably. The government of Pakistan has launched a major economic reform program. Although agriculture is not the main subject of this program but it benefits agriculture productivity by setting up some strategies which will help agriculture sector a lot.

(source:documents.worldbank.org/curated/en/178221468759316751/Pakistan-A-strategy-for-sustainable-agriculture-growth)

Another step that is taken so far is **saving water to promote sustainable agriculture in Pakistan**: A project by Nestle, Pakistan. The purpose of this project is to raise awareness among people to save water for agriculture sector. For this project Nestle, Pakistan has entered into a partnership with National Agriculture Research Centre to adopt efficient water management techniques that will improve agricultural yield.

It is argued that agriculture will continue to be one of the most important sectors of Pakistan's economy for years to come. If we start to implement the sustainable agriculture in our farms , we can easily overcome many issues regarding agricultural growth, income and health issues We can enhance the productivity of the agriculture sector through the provision of a series of input including availability of quality fertilizers, tractors and harvesters services etc. This will help Pakistan to improve her annual crop production, economical sector and this will surely benefits the small scale farmers in Pakistan. Improving sustainable agriculture in Pakistan would I have a significant effect on poverty in rural areas of Pakistan .This will not only make Pakistan economically strong but will also help maintaining the food security.

Sustainable agriculture is affected by a lot of factors which includes climate change, pollution, energy demand, population growth, water scarcity etc. A quick decrease or increase in temperature could lead to reduction or increase in the duration of crops which could lead to million tons of loss of crops. This will not only effect the crop productivity but also the natural resources and financial investment on the crops. Another major factor that affects sustainable agriculture in Pakistan is water scarcity. Water scarcity means the lack of sufficient available water resources to meet water needs within a region. When there would be insufficient amount of water for the crops the crops will gradually begin to die. This will affect the crop production and will result in the loss of a huge amount of crop yield which will not be economically feasible for any poor farmer in Pakistan.

There are many regions in Pakistan where there is not an adequate amount of water for the crops which results in the form of a barren land or eventually affects the crop productivity. In some areas of Pakistan people still rely on natural resources of water for the irrigation of their crops which results in fewer amounts of production and due to this reason farmer are entering into the circle of poverty. Pollution is another factor that could disturb the sustainable agriculture production in an area. Damage to crops by pollution of course brings economic loss as well. Temperature, water vapor, oxygen and carbon dioxide in the air directly affects the food and fiber production which could result in numerous health issues. So

this is obvious that sustainable agriculture is directly affected by pollution which could cause serious health issues.

The next factor is population growth. The population of Pakistan is increasing day by day and with the rapid increase in population the food resources are decreasing which is resulting in malnutrition and under nourished growths. In fact population growth is one of the major factors that affect the food insecurity in Pakistan. But if sustainable farming practices are adopted, agriculture can continue to provide critical ecosystem services, such as water regulation and carbon controls.

Improving Sustainable agriculture would help nourish and develop the agriculture sector resulting in better food management and food security. If we implement and develop Sustainable agriculture in Pakistan and limit the implement of subsistence farming than we can control the food security issues and will be able to revive Pakistan's economy. This could also lead us to the better quality and quantity of the food. If some major steps should be taken for implementing sustainable agriculture than the living conditions of rural areas and the lives of typical farm families will be improve.

Even if we implement the sustainable farming, it could only help us with things that are under our control. But we should keep in mind that being developed in sustainable farming could not save us from natural phenomenon such as heavy rainfall, drought and water scarcity .These are the natural uncontrollable factors that affect sustainable agriculture.

Suggestions:

1-Spread awareness among farmers about sustainable farming: In Pakistan ,there are still many regions where old ways of farming are practiced .Farmer needs to be educated with new methods and techniques of farming that are environmental friendly and promises better crop production.

2-Taking steps for improving the financial conditions of small/poor farmers: the Government of Pakistan should take some important steps for the betterment of small farmers' .Many budgets schemes shall be introduced for the rural areas and small farmers that promise better livelihood for poor and small farmers. Bills should be passed in assemblies giving some important health facilities to the poor farmers' families so that we could also come up with some health issues.

3-Academies for modern tools and method's education shall be open: Academies that give free education to poor farmers about sustainable farming tools and techniques shall be open in rural areas, so that poor farmers can get some knowledge about new methods of agriculture. By giving this opportunity to the farmers we could not only progress economically but can also reduce our food security issues that we are facing now a day.

4-Spreading awareness about climate change, water scarcity and pollution: Climate change is one of the most important issue of this century. The way climate is changing, it can have a strong effect on food security .So people must be aware about future challenges. They need to learn some safety measures because a stitch in time saves nine. People should be addressed about pollution control and water scarcity that how these factors are affecting the environment and crop growth.

One of the local projects on which people are working on, in Pakistan is WWF-Sustainable Agriculture Program. WWF-Pakistan is working with businesses, government, farmers, research institutes and other organizations to discover and demonstrate ways of growing cotton and sugarcane in Pakistan by using less water, chemical fertilizers and pesticides since 1999 under the Sustainable Agriculture Programs (SAP). SAP is the outcome of WWF-Pakistan's effort towards sustainable agriculture as a holistic and scientific approach and a participatory movement for socio-economic and transformation that endorses and respects local knowledge and values for better ecosystem management. WWF-Pakistan is also working on climate change, water stewardship and for conserving biodiversity. We all know that climate change is an undeniable fact of the 21st century but WWF-Pakistan is researching and working to enhance information and training on climate risk and adaptations. SAP is also working to identify the need to prioritize implementation of Water Stewardship initiative for fresh water management to address the challenges of both water scarcity and pollution.

There are certain other things that government, authorities and communities can work on to make Pakistan a better country to live. We should try to work together for the betterment of the agricultural sector in Pakistan. Communities can work together to raise awareness among farmers and people about sustainable agriculture. Government should run campaigns to aware people about climate change, water scarcity and pollution. People who work for the betterment of the environment should be encouraged by government. People can also run camps to educate farmers about modern tools and techniques. People should be addressed about upcoming climate changes so that they can prepare themselves about any kind of situation. We have to work together for a better future for our generations. Let us all as responsible citizens, stand up for what is right in order to have a successful future.

A typical Pakistani family could work on these recommendations in some ways that benefit us on small levels like education consideration of their children. Making sure that the crops are free of chemicals and harmful substances. Keeping up with the latest going-ons in the country and trying to take part in things that affect their community positively. Force accountability and transparency. Ask questions and demand answers for them. Every member should try to contribute in financially supporting the family and try to improve the employment rate of the country as well.

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