

Policy Brief

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Agricultural Institutions, Practices and Sustainability in Bangladesh*

With increasing population, agriculture has faced a formidable challenge to provide with the sustenance for the fast growing population, in which Bangladesh has appeared as a success case. At present, however, water availability in Bangladesh is a major challenge for agriculture production which in turn threatens sustainability of this sector. Due to excessive monsoon rainfall and water flow from upstream, river erosion has accelerated as waves and tides erode old lands while silt and other sediments deposited in water bodies which causes flood in low-lying areas every year. Floods have also damaged approximately 4 percent of total rice production annually (Rasid, April, 1993)¹. Soil health has degraded because of reduction of organic matter in soil which might give birth to bigger problems in future. Low price of agriculture products at farmer's level has also been a major challenge. Moreover, variable rainfall pattern, excessive cold and unusual dew has also hampered agriculture production.

Focusing mainly on agriculture sustainability, the Ministry of Agriculture (MoA) had prepared the National Agriculture Policy (NAP)² in 2013 with the core objective of making the nation self-sufficient in food through increasing production of all crops and ensuring a dependable food security system for all. There are few more subsidiary objectives including ensuring a profitable and sustainable agriculture production system, preserving and developing land productivity, taking appropriate initiatives to develop

efficient irrigation system, protecting interests of the small, marginal and tenant farmers and developing proper disaster management system. The policy has been formulated to provide proper guideline for various development activities related to crop sub-sector, in order to achieve the aforementioned objectives.

Bangladesh has been able to achieve a tremendous success in setting agriculture extension up to union level. Ministry of Agriculture has already drafted the new agriculture extension service. However, even after taking proper initiatives to implement agriculture policy, notable policy gaps are still evident just as before. Most significantly, women's participation remains a major concern in NAP (2013) particularly in agricultural crops and product processing, agri-business related functionality, new improved agricultural technology adaptation and marketing systems. For instance, the policy documents are, in general, based on notional ideas and lack serious analysis due to absence of reliable data and analytical capacity within the ministries as mentioned in a report prepared by the Ministry of Agriculture for UN Food and Agricultural Organization (FAO) in 2006³. The report acknowledged that the domains of different ministries are not defined clearly; the consequences are problems in formulation and implementation of the policies. Lack of reliable data, analytical capacity of the ministries, short of informed analysis, marketing of the product and incentives of the producers had been identified as the major obstacles in this regard. New inbred and hybrid varieties were introduced to produce more with the help of new technology. In addition, digitalized agricultural extension services (e-agriculture) initiatives and post-harvest management techniques are introduced. New agriculture policies internalize the environmental pressure from other policies. But there are mixed impact emerged like decreasing land used and soil loss, increasing intensity

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1 Rasid, B. K. (April, 1993). *Flood Damage to Rice Crop in Bangladesh*. American Geographical Society.

2 National Agricultural Policy (2013), MoA, GoB

3 Ministry of Agriculture, *A Synthesis of Agricultural Policies in Bangladesh*, United Nations, July 2006.

of water uses, decreasing nutrients surpluses etc. Besides that the definite definitions of property rights in agriculture are needed to assist policy makers deciding who will be liable for environmental damages and how they will be rewarded to provide environmental services⁴.

Agricultural Policy Reforms in Bangladesh

The economy of Bangladesh used to be completely dependent on agriculture for a long period of time. But the scenario has changed a lot; economy is shifting towards both the industry and services sectors (Ministry of Finance)⁵. The trend for the share of agriculture in the economy has been waning. However, agriculture still holds a significant position in the share of the GDP immediate after the industry (19 per cent)⁶. The government has been taking many initiatives for the betterment of this sector; as part of this, many policies has been oriented to address the bottlenecks in the agricultural sector.

Few recent changes made in agriculture policy are mentioned below:

- A remarkable changes have been made concerning agricultural research and development through research planning, ensuring governance of research institutions, and endowing with more fund for research institutions to inspire in innovating new varieties;
- Government has been trying to foster research environment through adequate contingency support, increment of remuneration, availing funds for higher education and knowledge enhancement for better return from incentives;
- In NAP (2013), private sector has been also prioritized in need of input supply. Quality control, distribution, monitoring of the inputs have been posed to provide through both public and private organizations;
- Under the NAP (2013), responsibilities of technology assessment, refinement and transfer lay on research agencies;
- Bangladesh Agricultural Research Centre (BARC) and all agricultural research institutes have made efforts to enhance involvement of scientists in outreach extension programmes;
- Benefit of small farmers are being addressed with policy formulation (National Food Policy 2006) to

increase their nominal income instead of real income;

- The concerns of national goal and priorities similar to dipping poverty, improving the livelihood opportunities for rural farmers and means of providing efficient and effective services for sustainable agricultural growth and development were addressed under Strategic Plan 2002-2006 to make Department of Agriculture Extension (DAE) more effective;
- Also, agriculture marketing system emerging as a concerning issue has been placed for the first time in the latest agriculture policy.

Policies towards Sustainable Agriculture

Three-four decades ago agriculture was sustainable without any intervention like pest management, high yielding varieties, and irrigation projects. Previous sustainable practices are now being eroded. Farmers are often forced to follow profit centric approach ignoring long run implications. Deficiency of organic matter in soil (less than 1% in some areas), farmers' knowledge inadequacy and reluctance to follow the instructions, high usage of chemicals, penetration of industrial wastes in food value chain, share cropping, deteriorating soil fertility etc. are also intimidating factors for sustainability. Unusual weather affects agricultural activity adversely. Increase in atmospheric CO₂ levels increases yield/production, but if the CO₂ levels go to above the 400 parts per million thresholds, trees cannot absorb the CO₂ from atmosphere (Craig D. Idso, October, 2013)⁷. The government, has prepared policies with regard to promoting agricultural sustainability over time which have been discussed below:

- National Agriculture Policy, 1999 was prepared to create an enabling environment for sustainable growth of agriculture for ensuring food security and reducing poverty through increasing production and employment opportunity. This policy also focused on the degradation of land productivity. Appropriate land use and adoption of suitable management technology can enhance and ensure land productivity;
- National Integrated Pest Management Policy (IPM) 2002 was prepared to train farmers on practices of growing healthy crops exorbitantly and thereby increasing their income on a sustainable basis;
- The New Agriculture Extension Policy (2015)

⁴ *Agriculture and the Environment: Lessons Learned from a Decade of OECD Work*, OECD, 2004.

⁵ *Ministry of Finance, GOB. Bangladesh Economy: Recent Macroeconomic Trend*.

⁶ *Statistical Yearbook Bangladesh 2013*, BBS.

⁷ *Craig D. Idso, P. (October, 2013). The Positive Externalities of Carbon Dioxide: Estimating the Monetary Benefits of Rising Atmospheric CO₂ Concentrations on Global Food Production. Center for the Study of Carbon Dioxide and Global Change .*

drafted for providing integrated agricultural extension service of Department of Agriculture Extension, Department of Fisheries, Department of Livestock and Department of Forestry under one umbrella through “National Agriculture Extension System (NAES)”. Beside that the digitized (e-agriculture) extension service promotes to assist farmers provisioning valuable information, integrated pest management control and provided active discouragement of damaging and hazardous agriculture practiced by the farmers;

- Integrated Agricultural Productivity Project (IAPP) and Integrated Pest Management (IPM) are under implementation to target technological adaptation, water management, capacity building, soil fertility increment and bettering overall agricultural productivity. Besides that regular trainings will be arranged for introducing and disseminating new technology, techniques among farmers;
- Initiatives have been taken by the government to ensure optimum usages of ground water resources by introducing Alternating Wetting and Drying (AWD) methods under Integrated Agricultural Productivity Project (IAPP) [June 2011];
- Bangladesh Agricultural Development Corporation (BADC) is also trying to introduce drought resistant and desiccation tolerant crops.

These various policies, however, are hardly implemented at the field level. DAE is responsible to support farmers as per policy and hence its offices are set up at district level and operate under first class officer at divisional level.

Agriculture Marketing System in Bangladesh

Since government does not procure most of the agricultural products, market plays the role of matching the buyer and the seller. However, most of the stakeholders involved focus only on the production side ignoring the marketing side. Therefore, farmers frequently consider marketing as being the major problem of getting fair production price that adversely affects their income level. A large price gap exists between the last wholesale point and the retailers. Existing market value chains fail to ensure fair price at farmers’ level and low price at consumer level. The story behind why the farmers are not getting fair price is that they are not aware of the actual price associated with cost of production. The existence of middle man creates asymmetric information which in turn causes imperfect completion in agriculture market mechanism. Further, because of the lack of knowledge, they are often poorly equipped to potential solutions. Draft New Agriculture Extension Policy (2015) and formulation of

NAP (2013) assist to improve the agricultural marketing system in Bangladesh. The former policy addresses on eradicating farm management and marketing problems at farm level through the exchange of information among farmers. NAP (2013) emphasizes on marketing infrastructure, market information and extension service, Agro-processing; Export and Market Development; Market Rules and assistance; Private sector agricultural trade prospects. The National Agriculture Extension Policy (NAEP) in 1996 aimed at providing efficient and effective services to the various partners and agencies within the national extension system. The government also encouraged the cooperative marketing for receiving the fair price of the agricultural products. Efficient market mechanism system, nonetheless, has not yet been introduced to resolve the existing imperfect competition in agriculture market. The existing system is poorly constructed and is merely a traditional one with no systematic set of rules. Under Strategic Plan 2002-2006, the Department of Agriculture Extension has the responsibility of providing whole farm services along with other organizations and local government. However, its responsibility is only confined to price related information collection.

Policy Recommendations

No single solutions can remedy the existing problems in agriculture sector, rather a set of interlinked solutions should be devised. Following changes and initiatives can be taken for the future improvement of agriculture sector:

- Promotion of organic fertilizers and pheromone trap can be considered to reduce pesticide usage;
- Application of policies through institutional arrangement should be farmer and user-friendly;
- Seed, fertilizers and pesticides should be provided to farmers in time with subsidized price since government institutions and agencies cannot make this happen in time;
- Government can seek to identify the shortcomings of NAP (2013) and analyses the extension policy, water management policy, fertilizer distribution policy and seeds policy to integrate every agricultural policy in a single document and also give emphasis on policy coherence for integrating economic, social, environmental and governance dimensions at all stages of local and international policy making;
- Private organization as well as entrepreneurs should come forward to play a significant role in input market together with government organizations and agencies;

- Private sector can also contribute in this sector by introducing and disseminating new technology;
- Agriculture marketing system need to be more efficient and effective;
- Farmers' realization and understanding about the crop diversity is very important. Farmers should produce those products having large value-addition. They can produce other cereal crops and food grains like wheat, maize, barley which will be beneficial for price determination;
- Farmers should be informed and trained on how to produce optimally with scarce resources;
- Government can develop fundamental education system, enrich farmers' knowledge, maintaining vocational and technical trainings standard to control pesticide residual effects and develop fertility level preservation policy etc.;
- Since, demand for agriculture product is inelastic, farmers might face loss due to oversupply. Hence, total production demand and supply requirement should be calculated each year so that farmers won't face lower price;
- Women's participation and overall community participation are important to improve market value chain;
- Controlled production and cropping diversification are important to improve the market value chain and protect the market price from volatility.



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