Analysis of INSHORE Economic Benefit and Growth Through the Proper uses of the Utility and Scope of Fisheries and Livestock: A Guideline to the MOFL in Bangladesh

1Abul Quasem Al-Amin, 2Gazi Mahabubul Alam and 3Che Hashim Hassan
1Department of Economics, Faculty of Economics and Administration, University of Malaya, 50603 Kuala Lumpur, Malaysia and Associate Fellow, Institute for Environment and Development (LESTARI) Universiti Kebangsaan Malaysia, Malaysia
2University of Malaya, 50603 Kuala Lumpur, Malaysia
3Unit for Enhancement of Academic Performance, University of Malaya, 50603 Kuala Lumpur, Malaysia

Corresponding Author: Gazi Mahabubul Alam, University of Malaya, 50603 Kuala Lumpur, Malaysia

ABSTRACT
Within a process of counter arguments and scope, this study aimed to understand the INSHORE economic benefit and growth through the proper uses of the utility and scope of fisheries and livestock in Bangladesh. The specific evidence together with analytical justification is used to fig out the factors that are responsible in behind the lacking to the fisheries and livestock industry; however, a lot of possible prospects can be visualized by the scientific probable rationality. Therefore, we have taken the initiatives by this study to find out the core problems and challenges and a way forward to overcome the problem. Here, we have introduced a sound framework and guideline to the concerned body and policy makers (MOFL) in Bangladesh. Our piece of work would be a path for policy makers in the fisheries and livestock sectors and a trail for donor agencies to find out the lacks that responsible for the misleading design of projects and objectives and unsuccessful outcomes.

Key words: Fisheries and livestock, INSHORE economic benefit, animal and veterinary sector, policy issue

INTRODUCTION
Bangladesh government considers agriculture as major priorities for inshore economic growth and development through the remarkable achievements in the agriculture and agricultural sub-sectors. Since the independence with limited capacities and various limitations, Bangladesh has come across various strategies, policies and plans to support the agricultural sub-sectors. The National Food Policy (NFP) is the repercussion of that plans that reflects the priorities to achieve the national goals. Until recently, several action plans places in the Bangladesh national plans to identify the fundamental responsible actors and priority actions in the agricultural sub-sectors such as fisheries, livestock, animal and veterinary sectors. Bangladesh realizes the importance of agro-based economy and the fisheries and livestock sectors are placed the prompting and promising sectors in the development paths. Currently, the contribution of the agro-based economy is around 8% and that accounts about 32% of the total income by agriculture. Moreover, the inland animal protein mostly comes from the national agro-based sectors.
The Ministry of Fisheries and Livestock (MOFL) apprehends the significance of inland resources and concentrating on the livestock and fisheries resources to be preserved by proper planned development and management, innovative technologies through researches, increase the employment opportunities and increase socio-economic conditions of livestock and fisheries sectors in Bangladesh. A Plan of Action (PoA) of the National Food Policy (NFP) recently has been prepared for the year 2015 by the ministry of food and disaster management (MoFDM) and that translates the National Food Policy into 26 strategic areas of interventions in those sectors. The Plan of Action (PoA) under the National Food Policy is very inclusive and that involves 11 ministries and NGOs and most importantly the capacity building and technical support is providing by the FAO, USAID and the EU together with the responsible actors, priority actions and a set of policy targets.

The government of Bangladesh also looking for international cooperation and funding together with local support for increasingly faced with considerable challenges such as population growth and inland agro-based demand to fulfill the economic sustainability, climate change impacts on animal health and a way forward for policy (Al-Amin et al., 2011; Al-Amin and Alam, 2011). The Food Security Initiative (AFSI) and world food security summit also voiced similar desires and their vision reflects the needs of investment requirements for agro-based increased food security in Bangladesh. Country Investment Plan (CIP) also represents such a requirement and plan for Bangladesh as part of alleviating the rural poverty (BCIP, 2010). In addition to that, the food security initiative (AFSI) and World Food Security Summit reflects the statistics of dependency of livestock sectors, either as a source of food, income or fibre for Bangladesh (BCIP, 2010). More or less, related departments and organizations voiced for alternative way forward, inland resource utilization and research opportunities to find the gap. However, looking on the number of livestock projects and goals, it is quite evident that country specific Bangladeshi livestock projects failed in their objectives in many ways. The core reason is very straightforward: most of the goals and objectives did not realize the “real voice of the community (i.e., poor) and that is why the goals causes misleads in their objectives, approaches and channels by focusing appropriate needs and functionally, the purpose did not properly represented by the policy initiatives and implementations.

Therefore, we have taken the initiatives by this study to find out the voice of the lacking in Bangladesh. Furthermore, we have taken the initiative to figure out the linkage between the national agro-based demand and the scope of utilizing of fisheries and livestock (animal and veterinary) sector for developing an effective and sustainable economy. We have introduced an enhanced framework and guideline to the concerned body and policy makers (MOFL) in Bangladesh. This study will be a path for policy makers in the fisheries and livestock sectors to find out the gap of proper utilization of the inland resources and a shadow for donor agencies to come across the right voice of needs rather misleading design of goals and objectives and eventually initiatives.

MATERIALS AND METHODS
Framework of strategies: There are two stems on the analysis of inshore economic benefit and growth by the scope of fisheries and livestock sectors. The fisheries stem is belonging to the agribusiness-focused aquaculture and the livestock stem is belonging to the animal and veterinary sectors. The two stems have different priorities and in their scope of objectives. Therefore, we must consider the scopes from their respective priorities of decentralization to centralization to get an effective framework for analysis. We would be able to get an effective and sound framework only then as we would formulate the policy scope ultimately as centralization extent and bring
Fig. 1: Effective framework of strategies

(i.e., combine) them in one platform (Fig. 1). Nevertheless, how can we bring the two stems in one platform? Obviously, here we need the fundamental research to find out a fruitful way forward and effective goals and objectives and eventually initiatives. There are ample literature that can be found from the research contests such as by the agribusiness-focused fisheries and livestock related sectors (Wang et al., 2012; Farokhbad et al., 2011; Yu et al., 2011; Karim et al., 2010; Yuksel and Celayir, 2010; Sezgin and Kara, 2010; Celebi et al., 2009; Golan et al., 2008; Zoiopoulos and Natskoulis, 2008; Gizaw et al., 2007; Linares et al., 2006; Nwanna, 2005; Haque et al., 2003; Chilliard et al., 2000; Lund and Price, 1998; Lax et al., 1979).

The findings of these researches fundamentally discuss the issue on identification of fisheries and animal related diseases, disease context, disease influencing factors and what kind of remedial measures are important, genetic factors, genetic parameters and genetic trends to alleviate the issues (Demir and Bozukluhan, 2012; Abadi et al., 2011; Bahmani et al., 2011; Mansoori et al., 2011; Mahmoudi, 2010; Abasali and Mohamad, 2010; Calislar and Uygur, 2010; Li et al., 2010; Chen et al., 2010; Olhán et al., 2010; Yaylak et al., 2010; Aksoy et al., 2009; Taniguchi et al., 2007; Ahuja and Montiel, 2005; Tabidi et al., 2004; Karrar et al., 2003; MacMillan and Burke, 1996; Stevenson et al., 1994; Srikandakumar et al., 1986). Therefore, still there are lacking of country specific researches for the agribusiness-focused fisheries and livestock sectors in the economic perspectives, particularly in the developing countries like in Bangladesh.

The fisheries sector in Bangladesh accounts for about 20% of the agricultural GDP while the livestock sector includes around 12 percent (DOF, 2008-2009). More than 10 million Bangladeshi people are directly depending on these sectors for livelihoods (Karim et al., 2010). The fisheries sector alone contributes to the national GDP about 4 percent and fisheries sector provides about 80% for the Bangladeshi population. It contributes to 2 million full-time and about 12 million part-time rural employments for the fisher folk (UNDP, 2007). Within this sector, aquaculture contributes about 21% and the inland capture fisheries contribute about 51%. In addition to that the marine fishery contributes about 27% to total fisheries production. On the other hand, the current contribution of livestock and its sub-sectors to overall GDP is about 2.73% which is 17.15% of agricultural GDP. The highest growth rate in GDP of livestock sub-sector 7.23% for the years 2004-05 and 6.15% for the years 2005-06. The trends indicate that the contribution rate of livestock and its sub-sector to overall GDP is decreasing over time. Therefore, the question arise-what are challenges that are responsible.
The challenges facing the fisheries and livestock sectors are four-folds. There are wide gaps that practically needs and existing supports are available by the related organizations, agencies and government. The most important challenges are shortages of feed and fodder, lacking of vaccines, inadequate supply of veterinary services, inadequate fisheries and animal health services, poor management of livestock products, feeds, breeding materials, drugs and the recent effects of climate change. A recent study by CARE indicates a number of these similar challenges of national policy barriers (Karim et al., 2010). However, the sectors could contribute largely to rural poor people by income and employment generation (DANIDA, 2002). It may offer a good employment opportunity for the rural poor but here we need a fruitful policy framework that provides the long-run sustained opportunity. How the fisheries and animal related inefficiencies are affecting the country specific growth and sustainable development that needs to be analyzed by effective framework and research investigation. There are some barriers in the efficient operation in the fisheries and livestock sectors in Bangladesh. Generally, these barriers are related to fisheries related diseases but these are also largely revolving around by limited financial resource constraints with other constraints such as:

- Inadequate government support
- Shortage of investment
- Research and development
- High interest rates by related financial institution
- Poor management of existing financial service
- Climate change effect
- Diseases spreads in inland fisheries
- Lack of knowledge on nature and profitability of alternative enterprise
- Lack of extensive financial service for the poor
- Inadequate institutional arrangement

Institutional support and policy measures may play an important role in determining the overall performance and efficiency those sectors. Policy incentives by the national government and international agencies must include both macro and sectoral policies following on the objective on real needs. Recently, the government of Bangladesh finalized the Sixth five year plan for the year 2011-2015 (Planning Commission, 2009). However, there need some special attentions. The support services (include government supports) such as research and development, credit facilities, training, extension of required services, climate change effects and various infrastructures should be more extended in the sixth five year plan (2011-2015).

**Gap and issues:** The major focus of this study is to take the initiatives to find out the voice of the needs for Bangladesh and locate the linkage between the national agro-based demand and scope of utilizing of fisheries and livestock (animal and veterinary) sector following the major constraints. We have raised the issues of barriers in the earlier section that are largely revolving by financial constraints and limitations in particular. The UNDP (2007) identified similar issues on e.Krishi Vision 2025 for Bangladesh. The findings of UNDP (2007) are overall comparable what we have seen in the earlier section such as shortage of quality feeds, lack of research and development, poor epidemiological information, inadequate technologies for disease diagnosis, poor disease control programs, absence of complete marketing network and inadequate institutional arrangements.
Therefore, a sound policy requires finding out the gaps and issues for both fisheries and livestock sectors which we have addressed in each point from policy option to strategies of Fig. 1.

The resource constraints and support gaps for both fisheries and livestock sectors must be eliminated by the operational management and national policy frameworks. The initiative for livestock and fisheries services should concentrate in order to address the needs for poverty focus, collection of experience and co-ordination of livestock and fisheries services and programmes. Bangladesh may take the experiences from the global review of knowledge and experiences from fisheries and livestock sector services with regard to poverty alleviation from other developing countries. And finally, there must be a good co-ordination of national policies with national strategies, sectoral strategies, sectoral policies, sectoral action plan and activities which is largely lacking in Bangladesh (Fig. 2).

**Fisheries and livestock sustainability:** Even though there are huge potential in the fisheries and livestock sectors in Bangladesh for geographical location but due to policy gap and implementation, the risk is also there for sustainability. The important questions relate to the role of sustainability on fisheries and livestock sectors are the integration national priorities together with sub-sectoral policies and national co-integration. It should be economically and socially advantageous and safeguards for the national environment. Most importantly, we need an economically healthy market place before to take any expansion both of fisheries and livestock sectors and the investment opportunity and institutional arrangements should also be fruitful and prosperous. The national co-ordination both from the fisheries and livestock sectors should be integrated with national policy with care and the specialization would be the reflection by the national co-integration framework (Fig. 2). We must make sure the environmental and economic sustainability of the fisheries and livestock industry in the micro and macro level and our policy and framework must alone address the answer of the question how much fisheries and livestock resource could be the best fit to the inland economy? Otherwise, the interpretation and measurement of sustainability objectives would be a piece on paper work and documentation.

**Delivery system of fisheries and livestock service:** In order to have sound and effective policy on fisheries and livestock sustainability, there is a need an efficiency and cost effectiveness fisheries and livestock service delivery systems in the long run. The delivery system of fisheries and livestock service introduces the influence of policy frame conditions on economic, administrative,
socio-cultural and legal influence that affects the poor livestock keepers. The development of sustainable delivery system of fisheries and livestock service involves consideration of internal and external environment on animal health and breeding service, technology, social and economic aspect (Fig. 3). However, changing internal and external environment become more important to acquire a dynamic and necessitate, financially sustainable and closer to the ground as we called here that the voice of the needs. Therefore, we must consider the financial sustainability in the fisheries and livestock sector, external and internal environment on fish and animal health and breeding service, technology, social and economic aspect for effective framework and analysis. A few researches are available on the existing fisheries and livestock service delivery systems by the Swiss Agency for Development and Cooperation (SDC) in Andhra Pradesh (GoAP, 2008). However, Bangladesh should consider the experiences from reforms in Livestock Service Delivery Systems (LSDS)-a Participatory Process in Andhra Pradesh (GoAP, 2008).

**The impact of fisheries and livestock development:** We still consider the fisheries and livestock sub-sectors and industries as the key pillars of agricultural growth and development in Bangladesh. Currently, the contribution of the livestock sub-sector to agricultural gross domestic product (GDP) is 12% and to the country’s GDP is 2.9%. The main growth drivers are supply of improved breed, fodder and feed; financial incentives to the smallholder farmers; private sector-led investments and veterinary health services. On the other hand the fisheries sector contributes about 5% to the GDP and the main driving forces for growth of the fisheries and fisheries sub-sectors are highly intensive technological management and private sector-led investments for commercial farming (Karim et al., 2010). However, the contribution of the livestock sub-sector and fisheries on the GDP is declining over time. But why—this is the vital question and we need to study and analyse before finalizing any policy framework.

Planning Commission of Bangladesh recently estimated the projected demand and gap for the year 2011-2015 of fisheries and livestock sub-sectors and industries, using the resource, utilization and growth variables and the analysis suggest the deficit trend of the difference between the demand and supply gap (Planning Commission, 2009). Moreover, the research findings by the Karim et al. (2010) also indicate that the deficit would further increase by the end of the period of Sixth Five Year Plan (2011-2015). Therefore, the current evidence raised questions on the resource stock, resource utilization and the proper growth both on the fisheries and livestock sub-sectors and industries (Fig. 4). As a result, the subject matter of policy frameworks are also under stress to meet the extend demand by the inland economy. Therefore, where is the gap behind and it is now the
extended question for both fisheries and livestock sub-sectors and industries. Is it belonging to problem on policy or overall management and development of livestock and fisheries resources. Or is it belonging to problem on the fisheries and livestock development programme.

There is a straight forward link to the subject matter both on fisheries and livestock sub-sectors and industries between the contributions to national GDP and overall national growth and development (Thompson and Colavito, 2007). The negative impact on the fisheries and livestock sub-sectors and industries cause dampen of GDP and national social welfare in Bangladesh. Consequently, the national economy must be under safeguard by the growth components of fisheries and livestock’s prospect and effort. Therefore, together with technological development we must considers the related barriers both for the fisheries and livestock sub-sectors and industries and these are primarily, (a) policy barrier and (b) additional barriers such as lack of organized market, inadequate animal and fisheries health service, restriction of breeds and breeding program, inadequate financial resources and finally climate change issues.

**DISCUSSION**

**Challenges:** The government of Bangladesh is considering to achieve the INSHORE economic growth and development in the agricultural sub-sectors and the government’s attention reflects on various strategies, policies and national plans on the agricultural sub-sectors and particularly by the National Food Policy (NFP). Eventhough with its limited capacity, Bangladesh has come across by National sixth five years plan to identify the fundamental priorities in the fisheries and livestock and its sub sectors. As a developing country Bangladesh is getting some benefits by some donor agencies in the forms of financial supports and possible actions plans but the policy implementations are suffering by some barriers bureaucracy and the involvement of politicians and generally implementation procedures are overlooking basic needs for the poor and poor farmers (Jabbar, 2010). Therefore, Bangladesh government is not getting the desired reforms and actions in the implementation process.

Moreover, the National Fisheries and Livestock policy and state policy are conflicting in the way of implementation procedure as state policy are formulated by the relevant agencies under the Ministry of Fisheries and Livestock which may not duly approved by the Government of Bangladesh (Karim et al., 2010). In addition to that, state policy involves other ministries and agencies which is most of the time unable to merge with relevant ministries and sometime place as supplementary, however, fisheries and livestock and its sub-industries deserves larger role in the...
district and sub-district level. Therefore, the action plan in the local level and national fisheries and livestock policy suffers for co-ordination and harmonization and as a result a number of sound policies can not get the expected outcome within the desired timeline. Consequently, to get the advantage by INSHORE economic growth link to proper uses of the utility and scope of fisheries and livestock (animal and veterinary) industry, the above mentioned challenges must be overcome.

There are other kinds of barriers that are dumping some sort of effectiveness of national action and policy. The first one we address it as the lack of organized market. There must be a value chain in the inshore economic benefit and growth through the proper uses of the utility and scope of fisheries and livestock sectors by adequate marketing system. The sound and efficient marketing system is largely lacking in Bangladesh. The poor and marginal farmers are not getting their fair prices for their product and services from the market due to unfair trade syndicates. In addition to that unfair practices of middlemen, agents and brokers are also breaking the proper marketing value-added chain in the marketing system. Therefore, good policy and framework would not work here in Bangladesh without the proper government intervention, initiatives and supports. Sometime the poor infrastructure, poor communication systems and lack of storage systems are causing extra negative impact to get the full benefit and growth through the proper use of the utility and scope of fisheries and livestock sectors.

Inadequate animal health service and facilities are also one of the important drawbacks and challenges for Bangladesh. A recent study by Al-Amin and Alam (2011) addresses the issue is detail. They mentioned that livestock services are primarily delivered to the farmers in Bangladesh by Directorate of Livestock Services (DLS) and Bangladesh Livestock Research Institute (BLRI) which are public sector organizations. In addition to that a number of Non-Governmental Organizations (NGOs), Cooperative Societies and private organizations are also involved. The Veterinary Vaccine Production Laboratory (VVPL) and sub-district Veterinary Hospitals (VVH) are equipped with sophisticated equipment but the activities are limited to private farmers (BER, 2010). The total vaccine production and supply can only supply 10% of the required vaccines (Al-Amin and Alam, 2011). Moreover, DLS can use its limited service network and limited field staff provides effective preventive services to only 10% of the ruminants and treatments to around 13% to all stakeholders and it is inadequate, ineffective and infrequent for the whole Bangladesh (BER, 2010).

Inadequate financial resources and credit facilities are also causing problem in the value-added chain in the marketing system. The fisheries and livestock and its sub-industries also receive very little out of the government’s huge subsidy bills. On the other hand, this sector generally gets small allocation of agricultural credit from various credit institutions (Karim et al., 2010). The government is still trying to help the poor farmers to get the agricultural credit as easy as possible but the reality is far behind to get in practical. However, a few of the poor are getting the services from the non-government credit institutions but the interest rate is quite high compared to government credit institutions and most of the time the outcome getting from non-government credit institutions by the poor is negative rather positive.

Finally, the national policy of Bangladesh is fundamentally suffering currently for climate change related research of animal health impacts, lack of policy alteration in emergency situations and lack of scenario research for impacts on distant animal health forecast, disease spread and migration which is raised by Al-Amin et al. (2011) and Al-Amin and Alam (2011). Their studies addressed the climate change and its impacts on animal health and developing economy like
Bangladesh and affecting factors. They also addressed the gap of prioritizing policy approaches (of knowing how preferences) and climate change mitigation impact on the distant future in Bangladesh and specifically mentioned some issues that are fundamentally responsible effective policy issues such as (a) national priorities, (b) lacking research on climatic animal health impacts and (c) global outbreak of animal health impacts (Al-Amin et al., 2011; Al-Amin and Alam, 2011).

**Policy issues and guidelines:** We have observed the challenge that is facing by the livestock and fisheries sectors and policy barriers contribute one step further to a number of these challenges in the effectiveness of national policy and action. In order to have the fruitful outcome; the policy makers and concerned body must eliminate the raised challenges in the development of a policy items such as by (i) agenda setting (problem identification) (ii) policy formulation (iii) adoption (iv) implementation and finally (v) evaluation. Therefore, in addressing the challenges by the livestock and fisheries sectors policy and concerned body must consider firstly agenda setting on removal of policy barriers and institutional reform by looking at the (a) shortage of investment (b) poor management of existing financial services (c) diseases spreads in the inland fisheries and livestock sectors (d) lack of extensive services for the poor (e) inadequate institutional arrangements (f) possible research and development and (g) climate change effects in the forthcoming national plan and national action plan on the livestock and fisheries sectors. Secondly, following the problem identification, the evaluation committee must finalize the policy formulation and thirdly, based on the recommendation by the members of the evaluation committee, the final policy should be adopted and implemented. However, there should be a provision of looking the evaluation of adopted and implemented plans and actions by each and every year until the end of five year plan. Now, time has come to rethink about the policy issues and find out the proper way of national plan with care and responsibility.

**CONCLUSION**

This study addresses the prospect and challenge of INSHORE economic benefit and growth through the proper use of the utility and scope of fisheries and livestock (animal and veterinary) in Bangladesh and figure out the factors that are responsible behind the lacking. Particularly, we have addressed the policy gaps that are barriers to acquire the utility and scope of fisheries and livestock (animal and veterinary) industries. We have identified the necessary provision and expansion that are deemed required for a sound framework and guideline to the concerned body and policy makers in Bangladesh. We have initiated extended agenda setting on removal of policy barriers and institutional reform by introducing policy reformulation, adoption, implementation and finally evaluation provisions. It is hoped that our piece of work will be a path for policy makers in the fisheries and livestock sectors and the guideline of the possible lacking that responsible for the misleading design of projects and objectives.

**ACKNOWLEDGEMENTS**

The authors are extremely thankful to Bangladesh Bureau of Statistics (BBS), Planning Commission of Bangladesh (PCB), Department of Fisheries (DOF), UNDP Bangladesh, Bangladesh Country Investment Plan (BCIP), Bangladesh Economic Advisors wing Finance Division (BER), Danish International Development Agency (DANIDA) and other open access sources for their information related to the current publication.
REFERENCES


