

12. Inclusive entrepreneurship along fisheries value chain

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Global trend in fisheries value chain

Fisheries and aquaculture have prominent role in sustaining the food and nutritional security across the globe. With a rapid stride in global fish production, it attained a target of 179 million tonnes in 2018, out of which, about 87 % (156 million tonnes) accounted for human consumption providing an annual supply of 20.5 kg per capita that include around 17 % of global animal proteins and many essential micronutrients (FAO, 2020). It is observed that the global fish consumption trend has been almost doubled since 1973, which has been driven not only by increases in production, but also by a combination of many other factors like cutting-edge technologies in processing, cold chain improvement, shipping, transportation and distribution; traceability and rising socio-economic status worldwide, which strongly correlate with growing demand of fish and seafood products, reductions in post-harvest loss and waste; and increased awareness of the consumers about health benefits of fish. Of course, it has realized a robust increase in global aquaculture production estimated at an average 6% per annum during 2001-2015 (FAO, 2018a). Today, global fisheries have confirmed its pivotal role in international trade and export as an important driver for economic growth. The total export value of fish and fish products was estimated to be USD 164 billion recorded in 2018 which contributed almost 11 percent to the global export value of agricultural products except forest products and about 1 percent of the value of total merchandise trade.

In the same line, Indian fishery is one of the fastest growing enterprising sectors in the country, has established its dominance in global fisheries as the third largest in total fish production and second in aquaculture production. With an average annual growth rate of 14.8%, India shares about 7.7 % of the global fish production and ranks 4th in global exports of fishery products. It contributes 1.07% to national GDP and 5.23 % to agricultural GDP of the country. The fish production in India has registered an average annual growth of 7.53% during last 5 years and made a quantum jump in production from a meagre level of 0.75 MMT during 1950-51 to an all-time high of 14.2 MMT during 2019-20. Further, the impressive growth in the export of marine fish and fisheries products of 12.9 lakh metric tons and valued at Rs.46,662.85 crores (USD 6.68 billion) during 2019-20, has reaffirmed the prominence of Indian fishery sector as an important foreign exchange earner for the country (DoF, HBFS-2020).

Fish for livelihood security and human nutrition

Food security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life (FAO, 2012). As per estimate, during the period 2014–2016 more

than one in nine people in the world suffered from hunger, while 13 percent of populations of all developing regions were undernourished (FAO, IFAD and WFP, 2015). The fish is considered as crucial to improve food security and supplement human nutrition in the fight against hunger, as articulated in the 2030 Agenda. Due to easy affordability, abundant availability and low risk, consumption of fish supplemented with daily diet provides a vital source of protein and a variety of essential fatty acids and micronutrients, such as iron, zinc, vitamin A and others. In addition to providing nutrients, fish also contributes to the food and nutritional security of poor households in developing countries through livelihood diversification and income generation (Thompson and Amoroso, 2014; Béné *et al.*, 2015). As per FAO statistics (2016) about 59.6 million people were directly employed in fisheries and aquaculture at global level in 2016 and more than 200 million engaged along the value chain in various upstream and downstream activities from tide to table, thus sustaining the livelihoods of around 660-880 million people dependent on the sector. Upstream and downstream activities in fishing harbours, landing sites, processing facilities, maritime and logistical services, insurance and other financial services provide significant employment and economic benefits to countries and local coastal communities. Employment opportunities in ocean-based sectors have a great importance along the coastal areas of many countries, especially in developing countries where they often represent the only opportunity for livelihoods, earning an income and improving the quality of life for the family.

Exploring entrepreneurship in fisheries through value chain intervention

With an encouraging growth trajectory in fisheries and aquaculture sector, it can substantially contribute towards achieving the Sustainable Development Goals through proper inclusion of value chains in the sector. Multifarious value chain actors involved in the cycle can participate in fisheries value chains through inclusive viable business models (IVBMs) that can bring socio-economic development, livelihood improvement and poverty reduction (Wangila *et al.*, 2007; Kizito, 2017 and Kaminski *et al.*, 2020).

Value Chain refers to the full range of activities which are required to bring a product or service from conception, through the different phases of production, delivery to final consumers” (Kaplinsky and Morris, 2001). The concept of Value Chain in fisheries and aquaculture, refers to combination of all the activities and services starting from input supply to production (capture fisheries and aquaculture farming), processing, wholesale and finally reaching to consumers. Fisheries value chain is the process of bringing fish from harvesting through different phases of processing and delivery to the consumer. This process involves various economic utilities such as form, place, time and possession, which involves various actors and stakeholders such as governments, private companies, international agencies and credit institutions as a strategy of mobilizing physical and economic resources to promote small scale traders, fishermen, entrepreneurs and improve their livelihood standards.

In the process of value chain management, value is being added to the product or service at each step, which can address the major constraints and utilize the opportunities faced by stakeholders and entrepreneurs at multiple levels of the value chain (Kotni, 2016). The Value Chain analysis assesses whether the Value Chain is effective at maximizing the opportunities

and focus on those areas that can lead to improvements in Value Chain performance in terms of: (i) improving the planning, legal and regulatory framework for sustainable management of the resources; (ii) increasing the quantity and improving the regularity and continuity of production; (iii) improving the quality and safety of products; (iii) improving the mechanisms for cooperation among the Value Chain actors; (iv) reducing the time needed to reach the customer; (v) minimizing transactional costs; and (vi) improving the capacity of chain actors to follow and assimilate technology and market developments.

Why fishpreneurship is important?

The economic growth of a country is largely attributed to commodity-based entrepreneurship development in various sectors which brought out the concept of entrepreneurship with the objective of developing small-scale industries. In spite of India's high-profile economic growth in recent times, more than 300 million population still live in poverty, in which more than two-thirds of the population depend on agriculture and allied sectors for their livelihood, which is largely at small-scale or subsistence level. Today, Indian fisheries is considered as a sunrise sector with high potential for rural development, gender mainstreaming, food and nutritional security as well as export earnings that can be

"An entrepreneur is one who organizes and manages a business undertaking, assuming the risk, for the sake of profit. The entrepreneur evaluates perceived opportunities and strives to make the decisions that will enable the firm to realize sustained growth."

Pickle & Abrahamson (1990)

treated as an enterprise in the form of a rural entrepreneur-led hybrid model for small scale. Being a potential foreign exchange earner, this sector stimulates growth of subsidiary industries assuring availability of affordable nutritious food for socio-economically backward small farm holders. Hence, the entrepreneurial opportunities involved in fisheries sector have to be rightfully explored and utilized through entrepreneurial motivation, technology empowerment, skill up-gradation through different management techniques and sustenance mechanism.

Entrepreneurship in fisheries means undertaking a new business venture to make it profitable. It comprises of activities as gathering of information, communication with chain partners, market orientation, strategic decision making, learning *etc.* Entrepreneurship deals more with strategic issues than management which focuses more on operational and tactical decisions. Craftsmanship and management can be learned more easily than entrepreneurship; the first two aspects have a more technical or procedural character, whereas entrepreneurship involves a lot of 'special' skills of the farmer, like communication and risk management, and competencies like leadership, initiativeness, openness to signals from society, vision, creativity, self-reflection *etc* (De Lauwere et al., 2004b).

Entrepreneur VS Entrepreneurship

Entrepreneurs are those who manage an enterprise as a viable business. *The word 'entrepreneur' is derived from the French word 'entreprendre' which means 'to undertake'. Schumpeter has portrayed Entrepreneur as an innovator. He considered entrepreneurship as the catalyst that disrupts the stationary circular flow of the economy and thereby initiates and sustains the process of development (Block et al, 2017).* The entrepreneur is characterised by

innovative behaviour and employs strategic management practices in the business (Cartland, 1984). Entrepreneurship has traditionally been defined as the process of designing, launching and running a new business, which typically begins as a small business, such as a startup company, offering a product, process or service for sale or hire (Yetisan *et al*, 2015). Entrepreneurship comprises of any purposeful activity that initiate, maintain or develop a profit-oriented business in interaction with the internal situation of the business or with the economic, political and social circumstances surrounding the business (Harvard School).

Entrepreneur according to E.E. HAGEN is an economic man, who tries to maximize his profits by innovations. The process of creating something different with value by devoting the necessary time and effort, assuming the accompanying financial, psychic and social risk and receiving the resultant rewards of monetary and personal satisfaction is called entrepreneurship (Fry, 1996). Thus, the entrepreneur is the key agent in transition processes of development.

Entrepreneurship Development

Entrepreneurship development deals with the study and analysis of entrepreneurial behaviour, to support the establishment and growth of the enterprise. Entrepreneurship development (ED) comprises the activities related to enhancing entrepreneurial attitude, skills and knowledge through various capacity building programmes. It intent to create an environment of confidence which can boost the morale of entrepreneurs so that more and more venture will be established. This will add to the employment generation and economic development of the region. Such initiatives have the potential to absorb the skilled youth of the nation so that unemployment issues can be sorted out. Entrepreneurship development can help in sustainable utilization of resources which was hitherto unexploited. New entrepreneurships can cater to the varying needs of general populace, which could not be served by Government services alone. Entrepreneurship is promoted to help alleviate the unemployment problem, to overcome the problem of stagnation and to increase the competitiveness and growth of business and industries. Various attempts have been made to promote and develop entrepreneurship. By giving specific assistance to improve the competence of the entrepreneur and his enterprise so as to enhance his entrepreneurial objectives and accommodate more people to become entrepreneurs as well.

Mishra (2005) regarded entrepreneurship development as an approach of developing human resources. It is concerned with the growth and development of people towards high level of competency, creativity and fulfillment. Entrepreneurship development has different phases viz. stimulatory phase, support phase and sustaining phase.

Stimulatory Phase

This is the beginning stage which comprises all activities that can stimulate the prospective entrepreneur/s to take up the initiative. The process begins with awareness generation, identification of opportunities, sensitizing potential entrepreneurs, conceptualization and development of suitable enterprises tuning to the specific context etc. It is meant to handhold and facilitate the persons vouching for entrepreneurship, but lacking the initial momentum. The aim is to create an atmosphere for the making of entrepreneurs and enterprises. Assessing the

entrepreneurial intention, development of entrepreneurial motivation and channelizing it into the action domain are the major activities in this phase, along with imparting required skill sets. This prepares the background from where people start looking for entrepreneurial pursuits. All these taken together stimulate entrepreneurship in a society.

Support Phase

This is the continuation of stimulation phase to facilitate the motivated entrepreneurs to channelize their ideas to action domain. Major activities include facilitated access to resources, infrastructural development, technology backstopping, market linkage, legal assistance and other services. The focus is to remove all the hurdles in the way of prospective entrepreneurs and help them to carry out the activities successfully.

Sustaining Phase

Sustainability of the enterprises is an important concern. Many enterprises fail to sustain after the withdrawal of initial support/ incubation period. Changing socio economic and political context may pose new challenges to the enterprise. New regulations and market condition will further add to the worries of the entrepreneur. Many of the entrepreneurs, especially the small-scale entrepreneurs may not be able to cope up with the changing scenario and new set of problems as they are not prepared to face those issues. Lack of adequate finance, inputs and new product requirement may trouble them. Support for sustaining the entrepreneurs is needed in such cases in terms of arranging for finance, legal support, product diversification, modernization expansion etc.

There is always confusion over the concepts of Entrepreneurship and self-employment and both are often used as synonyms. Many self-employed individuals are indeed entrepreneurs, but not all of them. In most of the cases self-employments are micro level initiatives in informal sector, where growth is not focused. Entrepreneurship is broader concept compared to self-employment and focus on growth and development. Entrepreneurship, as opposed to self-employment, is also defined by the spirit of the entrepreneurs (GFRAS,2016). Entrepreneurs are usually creative, take opportunities and accept risks, and can quickly change business strategies to adapt to changing environments. They are often innovators (Kahan, 2012).

Entrepreneurship development has to start with assessment of resources, need and market potential. Focus should be on product/services of high growth potential with the aim to initiate and grow dynamic enterprises. Equally important is to identify the risk involved and to develop strategies to overcome the difficulties. Creation of a facilitating environment is important at policy level including change in the mind sets of individuals, government servants and policy makers towards entrepreneurs.

Many studies have shown that ‘intention’ antecedent of entrepreneurship development. So, it is important to identify the factors affecting the ‘intention’ so as to strengthen the supporting dimensions and to lessen the hindering dimensions. It was reported that personal attributes like optimism, innovativeness, risk taking ability etc. are positively affecting the entrepreneurial intention. Entrepreneurship development programme need to have a screening process for

identification of the beneficiaries with strong entrepreneurial intention so that sustenance of enterprises will be more. Pervasiveness of entrepreneurs largely depends on the strong intention of the prospective entrepreneurs.

An entrepreneurship development programme has to increase the competency of aspiring entrepreneurs to recognize and design unique entrepreneurial strategies based on the assessment of local situation and market condition. The programme should encourage the entrepreneur to expand or diversify the production in response to the emerging scenarios. A spirited entrepreneur can discover a market for the product, which is otherwise remaining hidden. In a truly entrepreneurial approach, innovative capacity matters more than the size of the market. Diversification can be accomplished by introducing a novelty or new product feature, stressing quality or value added, anticipating a new market or even creating a market.

Challenges in fishpreneurship development

- 1. Knowledge and skill gap:** In spite of large numbers of available entrepreneurial fishery technologies, there is weak linkage of professionals with stakeholders those who are on the receiving end with respect to acquisition of knowledge, capacity building and interface for instant solutions of field problems. Therefore, frontline extension should be rightfully utilized to awaken and sensitize the stakeholders about the scopes and opportunities that are available for entrepreneurship development in fisheries.
- 2. Technology gap:** Today the main concern is lack of technology transfer and dissemination to the right people at right time. Without using the appropriate technology, our products are getting low valued with poor quality that fails to fetch the market. This indifference to technology is proving to be very expensive. Hence, disruptive extension system needs to be adhered to bring sustainable development through effective technology dissemination.
- 3. Market gap:** Growers and producers have no access to market or lack proper understanding of market network as a result middlemen (mostly mafia) siphon away the profits and do not fulfil the market needs adequately and appropriately. Marketing expertise ought to be utilized for such a scenario.
- 4. Entrepreneurial gap:** Mostly the Indian farmers lack the basic entrepreneurial instinct to venture for start-up business. That may be due to lack of entrepreneurial motivation, social responsibility, achievement planning, risk taking ability, poor market linkage above all proper business plan, which needs to be addressed through various capacity building programmes. Today very few persons have the aim for building a career in agri-preneurship rather those who attempt when they fail to find any kind of livelihood because of lack of skills or any reason.

Role of Government:

The government can play a proactive role in this respect which emphasizes the following guidelines.

1. Assessment and sustainable management of the Resource:

Due to 'open access' nature of fishery resources, it often results in scarcity of raw materials. A lot many fishermen chase for limited stock of fish resources that consequently

lead to wild fluctuations in supply. Hence there is urgent need for assessment of growing stock, mapping the resources and monitoring the status of the resource base. It is the responsibility of practicing 'Responsible Fisheries' in the interest of natural resource and bio-diversity conservation.

2. Development of Resource base:

The policy level interventions may be made that can contribute meaningfully to sustainable growth of fishery resources in the country :-

- ❖ **Diversified production** - Integration of fishery with agriculture and other allied sectors.
- ❖ **Emphasis on seed production** – specially of carp (projected at 34400 annually), scampi (giant fresh water prawn, projected at 8000 million annually) and shrimp (for brackish water aquaculture, 10000 million annually) and if necessary; additional requirement of seed of other species like catfishes, seabass and ornamental fishes can also be thought of.
- ❖ **Conservation of fish diversity and fish habitat** – Indian fish diversity is estimated to be composed of more than 2200 fish and shellfish species in the marine, brackish water, freshwater and coldwater environments. So remote sensing technology may be used to protect them from anthropogenic pressure and climatic hazards. Similarly, in case of inland fisheries, it is imperative that habitat restoration, setting up protected habitats and sanctuaries, ranching of rivers with seed of river-based brood stock can be taken up with immediate effect.
- ❖ **Cost efficient mechanization** of fishing gears to make off shore fishing beyond 50 metres of depth not only commercially viable, but also accessible to artisanal farmers.
- ❖ Reduction in by-catch or incidental catches through development of equipment like turtle excluding devices, etc.
- ❖ Cost effective technologies should be available to reduce wastage of harvested fish.
- ❖ Provision of storage facilities for marine and inland fisheries – both on- shore and off-shore.
- ❖ Technological inputs to be provided at affordable prices necessary to provide effective safety network while fishing in deep seas.
- ❖ Introduction of mariculture in marine water and cage and pen culture in inland water bodies.
- ❖ Fish seed production and its availability to fishers at minimum price.
- ❖ *In-situ* and *Ex- situ* conservation of endemic and threatened species.

3. Utilization & enterprise marketing

The sustainable development of fish and fishers calls for removing the following bottlenecks:

- ❖ Focused attention may be given to provide the necessary infrastructural support like *storage*, chilling, transportation and facilitate further value addition through processing, and establish a proper regulatory mechanism to reach to the market without compromising the quality.

- ❖ *Standard* marketing models may be made available for non-agricultural products, and innovative market models like regulatory markets, hygienic market may be developed for other agricultural and allied products, for removing the hurdles in marketing of produce.
- ❖ Steps to be taken to assess the quality of fishes in the market that deter the market development in regard to freshness and extent of contamination etc.

4. Extension, Training and Information Support

- ❖ Effort should be taken for formation of registered Fish Farmer's Producers Organisation (FFPOs) and Fish Farmers' Development Agency (FFDA) for equitable distribution of resources and share of benefits thus leading to sustainable development of the sector.
- ❖ Diversification and intensification are some of the key factors for sustainable aquaculture development and therefore the regular information flow among farming communities regarding technical know-how, marketing resources, export information, government schemes, input supply agencies and exchange of information with experts should be provided for steady growth in the farm economy. The IT led extension supported with digital mechanisms like One Stop Aqua Shop (OSAS), Aqua Choupal, Rural Knowledge Centre, e-marketing, e-administration, Mobile based advisory services etc. can solve these problems.
- ❖ Asset Based Community Development (ABCD) approach can be followed that intends for the development of community based on the principle of identifying and mobilizing individual and community 'assets', rather than focusing on problems and needs. It is an extension approach in which a community's micro-assets are linked with its macro environment. It believes that communities can initiate and sustain the process of growth and development themselves by recognizing and harnessing the existing but unrecognized assets.
- ❖ Strengthening linkage through pluralistic convergence of different stakeholders associated in the sector in Model village System of Extension (MVSE) approach. MVSE is the action research taken up in farmers' field based on the principle of leveraging the activities, investments and resources from outside agencies/externally aided projects resulting higher productivity, ensuring food security and sustainable improvement in overall quality of life by promoting leadership, self-dependency of the community in food chain.
- ❖ Encouraging the market opportunities through commodity-based village development following the concept of "One village, One product" as the brand name of the particular product.
- ❖ Regular conduct of skill-based capacity building programmes for technology empowerment and follow-up action for effective implementation.
- ❖ Encouraging the farmers-scientist interaction for technology development, assessment and application through Farmers' FIRST approach.

Conclusion

Entrepreneurial possibilities in fisheries value chain are yet to be fully exploited. The 'fisheries and aquaculture sector' is the promising sector which has immense growth potential. The sector support large number of subsidiary industries and provides livelihood millions of economically backward populations including many stakeholders. Apart from income and employment generation the sector contributes to food and nutrition security of the country. Entrepreneurial possibilities exist across the value chain in fisheries and aquaculture from sea production to value addition and marketing. Technological options for various subsectors like harvest, post-harvest, aquaculture production, by-product utilization etc. are being generated and the process is still going on in research institutes and fisheries universities. ICAR-Central Institute of Fisheries Technology is the pioneer institute in the development of harvest and post-harvest fisheries technologies. Prospective entrepreneurs can effectively make use of these technologies by utilizing the Business Incubation Facilities.

References

- Alexander M. Kaminski, et al (2020). A review of inclusive business models and their application in aquaculture development. *Reviews in Aquaculture*, 1-22. doi: 10.1111/raq.12415
- Bairwa S.L., Lakra K, Kushwaha. S., Meena L.K., & Kumar P.(2000) *Agripreneurship Development as a Tool to Upliftment of Agriculture*.
- Block, J. H., Fisch, C. O., & Van Praag, M. (2017). The Schumpeterian entrepreneur: a review of the empirical evidence on the antecedents, behaviour and consequences of innovative entrepreneurship. *Industry and Innovation*, 24(1), 61-95.
- Brush,C.;et. al. (2003). “Doctoral education in the field of entrepreneurship”. *Journal of Management*. 29 (3): 309–331
- Chander, Mahesh (2016). *Agripreneurs: Who they are and why they are important?* <http://www.g-fras.org/en/agripreneurship/resources.html>.
- FAO. 2020. *The State of World Fisheries and Aquaculture 2020. Sustainability in action*. Rome. <https://doi.org/10.4060/ca9229en>
- GFRAS (2016). <http://www.g-fras.org/en/agripreneurship.html>
- Kahan, David. (2012). *Entrepreneurship in farming*. Food and Agriculture Organization of the United Nations, Rome.
- Kizito, P., Kimani, E., & Lodiaga, M. (2017). Ventures Within Fisheries Value Chain that Men and Women Participate in Nairobi City County, Kenya. *Advances in Social Sciences Research Journal*, 4(8) 32-41. DoI:10.14738/assrj.48.3022.
- Kotni, V V Devi Prasad (2016). Value chain management in marine Fisheries: a case study of Andhra Pradesh. *International Journal of Managing Value and Supply Chains (IJMVSC)* Vol. 7, No. 2, June 2016. DOI: 10.5121/ijmvsc.2016.7202 9.
- Mishra, A. (2005). Entrepreneurial motivations in start-up and survival of micro-and small enterprises in the rural non-farm economy. *Journal of Small Business & Entrepreneurship*, 18(3), 289-326.
- Mohan, S. (2006). *Current trends in entrepreneurship*. Deep and Deep Publications.
- Mohanty, Sangram Keshari (2005). *Fundamentals of entrepreneurship*. PHI Learning Pvt. Ltd., 2005.

- Mohanty, A.K.& Sajesh V.K. (2021). Fishpreneurship development: A new direction in enhancing the farm income. A chapter in Fishpreneurship: Present Status, Challenges and Opportunities (Eds. Ravishankar C.N., A K Mohanty & Sajeev M.V.), BIOTECH Books, New Delhi. ISBN 978-81-7622-476-5.
- Pickle, H.B. & Abrahamson, R.L. (1990). Small Business Management. New York: John Wiley & Sons, Inc.
- Scott, S and Venkatraman, S. (2000). "The promise of entrepreneurship as a field of research". *Academy of Management Review*. 25: 217–226.
- Wongtschowski, M.; Belt, J.; Heemskerk, W. & Kahan, D. (eds.) (2013). The business of agricultural business services: Working with smallholders in Africa. Royal Tropical Institute, Amsterdam; Food and Agriculture Organization of the United Nations, Rome; and Agri-ProFocus, Arnhem.
- Yetisen AK; Volpatti LR; Coskun AF; Cho S; Kamrani E; Butt H; Khademhosseini A; & Yun SH (2015). "Entrepreneurship". *Lab Chip*. 15 (18): 3638–60.