

When Curiosity leads to the Innovation; Story of an aspiring Fish farmer

‘*Creativity is thinking up new things, Innovation is doing new things*’ –Theodore Levitt (1925-2006). In the evolution of the development innovation and creativity has always remains in the central role. Over time, advancement in agricultural science has taken place tremendously, in the agricultural system informal experimentation and innovation are always been taken place, driven by either necessity or opportunity. The farmers who are the real end-users of all the technologies are also a great repository of traditional knowledge and sometimes they become innovators in some unique aspect. Unfortunately, in the history farmers’ knowledge and expertise have always been undervalued, but in the recent past, science has realized that valuing the farmer’s expertise and innovation should be at the core of the development. This recognition has led to a gradual shift away from the linear transfer of technology model, towards ‘innovation systems’ approaches, which view innovation as an interactive process involving a range of actors with different knowledge and skills (Find Your Feet, 2012).

Recently, we have come across a *farmers Innovation* from Margnar village where Farmers FIRST programme (FFP) intervenes by ICAR Research Complex for NEH Region, Umiam are currently undergoing. Here we are talking about the innovative farmer Mr. Gumbir Syiem, a young and aspiring farmer who is one of the beneficiaries of FFP of ICAR-RC-NEHR, Umiam. He is 28 years old and a B.Sc. (Agriculture) graduate from Punjab Agricultural University, Ludhiana. After completion of graduation he has joined his family farming activities. In between, he was engaged in private tuition for the children of the dwellers of that village. From the Farmers FIRST programme he got certain input support such as piglets, tree bean saplings etc. But, later Mr. Syiem got interested and influenced by the fish farming activities after witnessing the integrated farming system module adopted by another progressive farmer of the village. Gradually, he entered in the fish farming venture, where initially he constructed only two ponds but at present, he is having seven nos. of ponds for aquaculture purpose. Four numbers of ponds is being used as a nursery tank, for fingerlings raising and rest three he is



Fig. 1 Mr. Gumbir Syiem in his farm

using for fish rearing purposes. At present, he kept common carp, Amur common carp, Grass carp, Japanese koi, Mrigal, local magur, Gonius. Other than the food fishes he is also cultivating gold fish, which is a very popular ornamental fish these days.

After a journey of two years in fish farming, recently Mr. Syiem has made an innovation, stirred by his necessity. Now, to know and document the particular innovation about his innovation, the force behind it, purpose, and usefulness of the same an in-depth interview was conducted along with repeated observation.



Fig.2, Goldfish and Local Magur



Fig.3, Bamboo made Aerator

In this era of the competing space of agricultural economy, fishery sector has occupied a vital share. In fish farming, along with timely feed and health care, proper aeration in the water body are equally important for the growth and wellbeing of the fishes. Proper aeration boosts

dissolved oxygen level in the water and improves the water quality which is highly favourable for the fishes even in terms of disease prevention. In the recent past, Mr. Syiem was facing a problem of proper aeration in the ponds where he is cultivating fishes. Driven by the necessity and his curiosity Mr. Gumbir has come out with a solution *i.e.* ‘bamboo made aerator’ which can be called as a *farmers’ innovation*. He has used pipes made of bamboo as an alternate to PVC pipes and other expensive motorised aerators. Now, bamboo served as great solution as it is abundantly available in the North-East region and it proved to be a very cost-effective technology. Hence, this ‘bamboo made aerator’ is successful in serving his purpose.



Fig.4, Visit to the farm by the ICAR-RC-NEH Region, Umiam Scientists

Normally, behind any innovation there might be many factors like socio-economic, cultural, institutional, and others. Here, one interesting fact behind this innovation is that Mr. Syiem was technically facing the proper aeration problem. But along with that another reason was that he was facing trouble in answering the questions of the fellow farmers of the village concerning the excellent growth of the fishes, as it was always surfacing and easily visible from the upper water surface; many questions arised *like what you used to give as feed? How this much growth of the fish has attained? and many more*. So, these were the kind of social problem he was facing in the recent past for which he was looking for some solution which must be scientific too. This ‘bamboo made aerator’ can be easily made from the locally available bamboo and as a source of water he used natural source ‘stream’ which is flowing at the back side of his farm. He has used bamboo as the only material for making the aerator, which belongs to some indigenous species,

locally known as '*doluba*'. According to the villagers, the particular bamboo species is going to be extinct in near future and one of the rarest one. This aerator is very cheap as compare to other aerators which use electric or made up of plastics. The cost of one bamboo is Rs.100/-only at the local market, and as per the opinion of Mr. Gumbir one bamboo is enough to cover three-fourth part of a pond as the length of this particular bamboo species is more, approximately 42 ft. The durability of bamboo pipe is also good though it depends on the species type, age and seasoning of the bamboo. Even there isn't any sort of harm from this product to the environment. In reality, smallholder farming is equally complex and dynamic, and farmers are constantly required to respond to new challenges. By identifying such innovative ways to increase the production, improve organization, or reduce dependence on external inputs, farmer's innovation will have significant potential to improve the quality of life for farming families in this hilly agro ecosystem.

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