



OBSTACLES IN THE ADOPTION OF AGRICULTURAL TECHNOLOGIES IN TRIBAL AREAS

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Tribal, which constitute about 8.6 per cent of India's total population, are the oldest ethnic group in the country. They are socio-economically poor community, living under harsh and subsistence conditions of poverty and deprivation, even after 70 years of India's independence. Predominantly they are living in rural areas and their major source of income is agriculture and allied activities. The present article is based on six years' experience of authors of implementation of Tribal Sub Plan (TSP) at Navapur Tehsil of Nandurbar district of Maharashtra.

EXPERIENCE FROM TRIBAL DISTRICT OF MAHARASHTRA

Nandurbar is primarily a tribal (Adivasi) district in Maharashtra consisting 69.30 per cent of scheduled tribe population. Navapur tehsil is situated on the border of Maharashtra shared with Gujarat state. The tribal population constitutes 84.90 per cent of the total population of Navapur

tehsil. The rural tribal are highly dependent on agriculture and allied activities for their livelihood. Rice, bajra, sorghum, wheat and maize constitute major cereals whereas pigeon pea, black gram, green gram and chick pea are the major pulse crops grown in the area. The groundnut is the major oilseed, banana is major fruit crop and onion is major vegetable crop grown in tehsil. The sugarcane and cotton are major cash crops of tehsil. The area is endowed with fertile soil, plenty of rainfall, favourable climate and good road connectivity. However, the crop productivity of this area was observed substantially low predominantly because of poor technological uptake. Various socioeconomic and demographic constraints in adoption of modern technologies in this area are:

Illiteracy, ignorance and unawareness: Due to high level of illiteracy among the tribal farmers, they have poor understanding and knowledge of improved agricultural practices. This converges into a habit of wilful ignorance about adoption of advanced cultivation practices for increased agricultural productivity and high farm profitability.

Ethics: Being highly ignorant and illiterate, there exist several ethical issues in the tribal communities. E.g. avoiding working on the day of *poornima*, *amawasya* or divine festivals, performing a rituals before starting season's agricultural practices. Another major belief among the tribal farmers is that a labour from one village should work only in the same village and working in other village/s is prohibited. This hinders in faster adoption of modern agriculture in tribal area due to intensification of artificial labour crisis.



Lack of knowledge about world outside: The life of tribal people is highly confined to local periphery and hence is far away from the highly sophisticated and modern world of science and technology. They are unconscious about facts, information, descriptions, or skills about world outside the tribal areas.

Erroneous rumours: Due to high belief and superstitious nature, the tribal farmers are highly prone to false rumours spread by few people in the society. The rumours most commonly spread and of most concern to tribal farmers are: threat to traditional culture of tribal's due to adoption of modern and high-tech agriculture, encroachments of farmers' land by government departments or agencies that are working in tribal areas, failure of crops due to outbreak of pests and diseases in some areas owing to adoption of modern technologies etc.

Suspicion, rigidity and negative attitude: High level of ignorance and illiteracy creates suspicions in the minds of tribal farmers and restricts them from adopting modern agricultural practices like new variety, fertilizers, pesticides, cultivation methods, etc. Tribal farmers are highly rigid, and resist change in their life style and day to days farming practices. As such the tribal farmers believe mostly in traditional way of living the life. The negative attitude towards improved agricultural information networks influences the adoption decision by tribal farmers. An ignoring attitude of tribal's creates undesirable situation responsible for underdevelopment of agriculture.

Political interference: The village level politics is prevalent in tribal areas. Few persons or groups are keener in influencing other people in the tribal societies for achieving and exercising positions of governance. In many cases there exists more than one political group in a single village. The many small local parties having diverse developmental agenda hinder the intervention of new technologies and ultimately the overall agricultural development.

Short satisfied people: The people in tribal areas are very graceful. Every festival they celebrate with grace, faith and excitement. They are very fond of different kinds of snacks

and beverages. Unity in the people for celebration of each festival including marriages is worth to praise. During festivals period they do not work. They give more importance to festivals than earning sources like agriculture. They are very happy with their earnings from agriculture.

Lack of enthusiasm and motivation: The enthusiasm and motivation is lacking among the tribal. The causes of weak enthusiasm and motivation are weak desire due to lack of self esteem and self confidence. The other causes are lack of faith in one's abilities, fear of crop failure due to past experiences, laziness, absence of enough stimuli or incentives in agriculture, etc.

Hopelessness: The tribal are hopeless about agriculture productivity rise, because they think that the things will never get better, there are no solutions to their problems, there is no point in trying anymore, and there is nothing that they can do to make the things better.

Aimlessness: The tribal farmers don't have any goal or ambition for their life. They live for today and don't think of tomorrow.

Non-agricultural environment: The tribal are basically the hunters and the agriculture was not a main occupation of their livelihood. Hence, the perspective of today's tribal towards agriculture is not commercial. Their efforts are not hard enough for raising their agricultural productivity.

Non-competitive environment: During routine gupshup the tribal farmers never/least discuss about the improved technologies for increasing the productivity of agriculture. The nil competitions were noticed in the tribal areas for development of agriculture. During demonstrations, the interesting thing observed was that, the majority of the tribal were not observing the neighbors plots, even if the demonstration plots were excellent with respect to growth and yield. They were not thinking about something is happening well around them. They are conservative and not interesting to take some well information.

Disguised unemployment: Disguised unemployment was found in agricultural sector of underdeveloped and



overpopulated tribal areas. Owing to use of family labour in agriculture, the number of persons working on tribal land is far in excess of those who are really required to produce the given volume of output. Thus, some of these tribal workers are surplus as they do not add anything to the volume of production. Their marginal productivity, i.e., the addition to production made by an additional unit of labour is zero. From the point of view of the tribal society, such person is unemployed because he does not contribute to output. Hence, huge disguised unemployment is prevailing in these areas.

Poor financial management: Due to traditional and subsistence type of farming practices, the tribal farmers are economically poor. Many times, the farmers use borrowed loan for non-productive purposes than for which it is taken. This affects the capacity of farmers to borrow and repay the loans from commercial banks, thereby increasing the cases of defaulters. This also discourages the interest of commercial banks for providing loans to tribal farmers.

Weak institutional development: The weak competition prevails in input and output marketing in tribal areas. The input and output sector was dominated by oligopoly stakeholder. Labour market was not being efficiently utilized. Market intelligence system was not reached up to farmers. Supply chain was not developed. Financing sector is not fully commercialized, as private money lenders dominate the finance market. Post harvest management industry is not developed in tribal areas.

INITIATIVES TAKEN TO IMPROVE TECHNOLOGY ADOPTION RATE

In light of above discussed facts, human resource development (HRD) is a highly necessitated for upliftment of tribal farmers through adoption of improved technologies. Strengthening the programmes that are oriented towards human resources development is a key to overall socioeconomic development of people of any nation. Agriculture in modern era is also not an exception to this, where highly skilled and trained manpower is crucial in achieving and sustaining the long term productivity and

profitability. Hence while conducting the baseline surveys during the initial phase of TSP implementation; we realized the intense need for initiating HRD activities (rather than distribution of inputs) to boost a sustained development of agriculture in tribal sector of Navapur. The knowledge last long from generation to generation, in contradiction input last for a moment and does not transfer from generation to generation. Hence, the planning and execution of various HRD activities like organization of exposure visits (figure 1), farmers' meets, discussion forums (figure 2), workshops, observing technology weeks, organising study tours (figure 3), observing world women day, social integrity programmes, soil and water conservation programmes (figure 4), on-farm training (figure 5), field days, field visits (figure 6), creating awareness through publication of agriculture literature, crop demonstrations etc. were on the prime agenda of TSP programme.



Figure 1 Exposure visits to dairy unit



Figure 2 Discussion forums



Figure 3 Study tours



Figure 6 Field visits to tribal farm fields



Figure 4 Soil and water conservation programmes



Figure 5 On-farm training to tribal farmers

IMPACT ON TECHNOLOGY ADOPTION BEHAVIOR OF TRIBAL FARMERS

The various HRD activities and crop demonstrations substantially changed the adoption behaviour of tribal farmers. Exposure visits & study tours to agriculturally advanced area changed the outlook of trials towards agriculture. They started to think about commercialization of agriculture. Exhibitions, technology weeks, farmers meet, etc. exposed the tribal to new farm innovations which changed the attitude towards improved technologies. Trainings, workshops, discussion fora, etc. deepen the understanding of tribal farmers about improved agricultural technologies. The field days and field visits augmented the confidence of tribes about growing crops in commercial ways in their own locality. Observing various social integrity programmes like world women day, soil and water conservation programmes increased the confidence on implementing agency. In nutshell extensive HRD activities along with crop demonstrations accelerated the adoption rate of improved technologies by the tribal farmers in reported area.
