PARTICIPATORY RURAL APPRAISAL ANALYSIS OF VILLAGE MATAUR DAURALA BLOCK OF SARDHANA TEHSIL IN MEERUT DISTRICT OF U.P. A CASE STUDY

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A survey was carried out in village Mataur Daurala Block of Sardhana Tehsil in Meerut District of Utter Pradesh by Participatory Rural Appraisal method. Resource map was prepared by transect walk, matrix ranking and personal inter views. The village Mataur was established about 400 years ago. Matour is spread 490 ha. Area. Total population is 9800 with the 70% literacy rate out of them 5518 men and 4282 women. Occupation is mainly (85%) based on the agriculture. 196 ha. Area is used under cultivation with the 0.14 ha. Average land holding. Area under irrigation is 98 per cent. There are approximately 3000 animals.The average annual rainfall of the village is about 810 mm, mostly obtained from the south-west monsoon. The soil types available in the village in sandy loam. The residential area is predominated by loam soil. Most of the cultivated land are endowed with sandy loam soil. Irrigation in the village is carried out mainly through the canal and tube well. Two pond is also present in the village. The source of drinking water is hand pumps. Major crops of the village are sugarcane, paddy and wheat. Besides, these, villagers also grow pulses like urad, moong, pigeon pea, and gram. Vegetables like potato, tomato, brinjal, gourds, bhindi, radish and palak are also grown in a very small area. Apart from these, villagers also have orchards of guava, mango and peer. The other vegetation found in the village are eucalyptus, seasum, poplar, peapal, banyan, neem, mullbarry. Most of the predominant weeds in the village are Cynodon dactylon, Cyperus rotundus, Amaranthus spinosus, Euphorbia hirta, Parthenium hystrophorus.

Basic Information :

Crop Husbandry–Kharif season : Paddy, Jowar, Urd, Moong, Pigeon Pea, Sugarcane. ***Rabi season :*** Wheat, Pea, Gram, Sugarcane, Tomato. **Zaid season :** Urd, Moong, Bhindi, Gourd, Brinjal, Sugarcane.

Trees, Flowers and Fruits–Trees : Eucalyptus, Neem, Peepal, Bargad, Poplar, Mulberry. **Flowers :** Marigold, Rose, Kanair, Dahlia, Hibiscus. **Fruits :** Mango, Guava, Papaya, Banana, Peer.

Animal Husbandry–There are approximately 3000 animals which includes both cows and buffaloes. We came across Haryana and cross-breds of Jersey cow. Similarly the buffalo population consists of Murrah. The population of buffaloes is on the higher side. There are few goats also in the village.

Metrological Status–The average annual rainfall of the village is about 810 mm, mostly obtained from the southwest monsoon. The rainfall is mostly confined to July-October months while the other months having scanty or no rainfall. The average maximum temperature is about 45°C in the month of May, and the average minimum temperature is about 5°C during the month of January. The relative humidity ranges from 32-85% during November-December. The average sunshine hour per day is approximately 11 hours during November-December.

Social Map–Social map depicts the social structure of the village, social institutions, religious institutions, occupations, social interac-

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tions, leadership pattern, values, neighbourhood pattern etc. It also shows the religious beliefs, caste system, and cooperation/ conflict among themselves. The part of the selected village has 100 households.

Social Structure–The population of the village Mataur is 9800, which consist of majority of general category casts. There are two temples in the village and all of them have adjoining wells.

Occupation–Majority (85%) of the people are doing cultivation. They earn some money by selling the surplus food grains, vegetables and milk. About 25 persons are in government jobs and 14 families are in business and the rest constitute the farming community. There are two barber families in the village.

House Type–Majority of the houses are pacca type. Almost all the houses have separate space for keeping the livestock and have water facility.

Family Structure–Majority of the families are nuclear type.

Marriage System–The villagers follow the arranged marriage system. Inter caste marriage is strictly prohibited. In the past, few cases of love marriages had been seen and about five couples had married in the court against the wishes of their parents. The average age of marriage in males is 25 and in females 20 years.

Time Line–Matour was establised about 400 years ago. As far as agriculture is concerned, the first tube well was established in 1930. In the year 1945 first tractor was purchased. At the time of independence chaff cutter, bullock cart (dunlop tyre) was introduced in the village. The farmers started using chemicals fertilization since 1951. They have started rice transplanting using pumping sets then after in the year 1955 seeds disc harrows and cultivators and PHC were introduced. In 1970 first thresher was used and Panchayat Bhawan, Dharamshala was build. During eighth decade Gobergas plant, Television and motorcycle were came in use. Villagers have telephone and cars since 1992. The facility of veterinary hospital is available since 1984. Vet. Hospital is located it Daurala block about 1 km. Away from village. There was a famine in 1967. The diesel-operated tube well was started in 1978. The tractor and thresher followed in 1985, and 1986 respectively. Insecticide sprayers were introduced in 1987, and in the same year, the flourmill and the oil expeller came into being. Crossbred buffaloes (Murrah, Bhadabari) were introduced in 1948 and the Veterinary hospital in the Block came into being in 1965. The crossbred cows (Jersey, Holstein Friesan) were introduced in 1983, and Artificial Insemination (AI) was started in the same year. The Punjab buffalo was introduced in 1991.

Resource Map–Resource map depicts various resources available with the farmers in the village relating to agricultural production. The checklist of this includes input agencies, water resources, advisory system, agriculture implements, crops, livestock and other service facilities related to agriculture. The livestock in the village includes Jersey, Haryana cow, Murrah, Sindhi Buffalo and few goats. There is a veterinary hospital at the Daurala Block, which is adjacent to the village. The facilities for artificial insemination (AI) and vaccination are also available at the hospital. Irrigation in the village is carried out mainly through canal and tube well. The source of drinking water is hand pumps and wells. There are two ponds in the village. There are two primary school and a junior school in the village. Apart from traditional agricultural implements villagers' also own modern implements like mould board plough, sprayers, duster, chaff cutter, thresher and tractor. The village has also got electrification. Generally they get the electric supply during nighttime, which compels them to go for power driven agricultural activities like irrigation, threshing etc. during nighttime. There is one input supply cooperative which provide fertilizers and chemicals to the farmers but farmers get most of the inputs like

fertilizers, pesticides, insecticides and seeds of major crops from Daurala Block.

Seasonal Analysis–The seasonal analysis is done to indicate various abnormalities that occurred during different months in relation to agriculture. The analysis helps to know various natural calamities that occurred and other problems faced by the farmers like labour shortage, water shortage, pest attack etc. Regarding village Mataur, the villagers face problems ranging from labour shortage to inputs (Seed, fertilizer and pesticide). Shortage of power and therefore, water becomes too problematic during summer. Pest attack and outbreak of diseases plus transportation problem is a regular feature. Villagers also face problem of grazing their crops by wild animals (wild pig and Neel gaya).

Time Trend (Crops)–At present Sugarcane is one of the major crops, which occupies more than 80% of cropped area in the village. The price is increasing year by year. From the year 1980 to 1999 the price has increased from Rs. 24/- per Quintals to Rs. 85/- per Quintals respectively.

Technology Map (Crops)–A transect walk was made with aforesaid key informants to see the status of technology adopted in the village. Being adjacent to the Daurala Block and near to G.B. Pant University and ICAR Institutions they have choice to adopt.

The main crop of the village is sugar cane COJ-64, variety occupies around 80% of cropped area. The other improved varieties seen in use are CO-8432 but COJ-67 and CO-1148 varieties is rejected. The next important crop is wheat RG-226 variety is adopted. RR-21 variety is dropped. The other crop is paddy. In this pusa-1 is adopted and Jaya variety has been rejected. Fodder crops (Jowar, berseen) is also grown. All the farmers are using tractor for cultivation and sowing. Use of fertilizers like urea, DAP, MOP, SOP, zinc are common. Pesticides like Furadon and Malathion are usually used.

Matrix Ranking (Crops)–Matrix ranking is an analytical tool for determining adoption, discontinuance, rejection, and reinvention and over adoption for various technologies of crops and animals. The main crops of the village are sugarcane, wheat and paddy.

Adoption–Adoption is nothing but the decision of the farmer to use a technology. The most preferred technology in the village are sugarcane (COJ-64 , CO-8432) and wheat (RG226) and paddy (Pusa-1). The major reasons of adoption are high yield, easy to adopt availability of marketing facility and technology available.

Active Rejection–It is the decision behaviour of farmer to reject a technology due to availability of a better technology. Sugarcane variety CO-1148 & CO-67, wheat variety RR-21 and paddy variety Jaya has been rejected.

Consequence Diagram (Crops)–It indicates the positive and negative impact of a technology adopted by the farmers with respect to crop. After interacting with the farmers of the Mataur village, one technology in crop was identified. The sugarcane is the main crop for the farmers of the village Mataur. The variety COJ-64 highly adopted. It gives most yields. Therefore, more income from Sugar as well as Jaggary, which leads better standard of living and happiness of the farmers. More employment is generated hence proper utilization of labour is done. Which ultimately checks migration of labour. There are some negative consequences also for the crop. It requires more quantity of chemicals and fertilizers and more irrigation, which causes more expenditure. It depletes the ground water and result is less productivity. Because of Govt. policy there is fluctuation in price and demand it enhance the probability for loss. Labour shortage causes imbalance in wages, which creates social conflict.

Indigenous Technical Knowledge (ITK)–Indigenous technical knowledge (I.T.K.) is learned by the villagers from their ancestors, which are proven beneficial for low inputs, sustainable agriculture. All of the I.T.K. may not be scientifically based but by knowing

scientific rationale of the most practical ITK's their basis can be used for the development of low cost technology for farmers in the region.

Like any other Indian village, our selected village also has its own set of traditional knowledge base. But this knowledge base is getting eroded. However, older generation still practice some of the ITKs which are as follows :

Crops : (1) First irrigation to sugarcane crop is supplied seeing the drying red colouration of its germinated buds/shoots. (2) To give protection against store-grain pests people of the village mix rice grains with dry lime (CaO) thoroughly before storage. (3) Neem oil is mixed with soap and applied with irrigation water to control termite in sugarcane fields.

Animals–(1) Ghee and mango leaves are fed to the cows for easy removal of placenta after calving. (2) To get more milk, milch breeds of buffaloes are supplied with sugar and dalda/oil. Dalda (1/2 kg) and sugar (1 kg) are boiled at first and then cooled subsequently which is fed to the breeds.

Recommendations :

1. Bio gas/soar energy may be used as renewable source of nergy for minimizing the dependance on electric supply.
2. Inter cropping of cucurbits in sugarcane may be done for utilizing space and also to get extra income.
3. Balance doze of fertilizer should be applied.
4. Sugarcane is used not only for making sugar but for the purpose of fodder also. Breeding programme should be directed towards increasing the succulancy of leaves and tender parts to increase the palatability sugar cane where farmer use it as a dual crop.
5. Integrated paste management practices should be followed.
6. Termite control may be done by replacing raw FYM by compost FYM or bio-gas slurry or vermicast.
7. Vermiculture may be used for composting.
8. Crop rotation must be followed is place of mono cropping of sugarcane to minimize the incidence of pest and disease.

CONCLUSION

The Mataur village under Daurala Block in Meerut district of Uttar Pradesh is a big village of population approximately ten thousand. The 93% of the village population comes under middle and above middle class and only 7% are under poor class. The land is highly fertile therefore, the agriculture is the main occupation of the village followed by business & service class. Daurala sugar mills being very near to this village, sugarcane is the main crop of the village. Livestock rearing is also practices for self consumption as well as sell of milk. Some of the problems faced by the villager is the lack of power supply, poor marketing facility, veterinary problem, labour problem, incidence of pest & disease, and water management problem. The Development offices in the district are engaged in the work for betterment of the people of village. But there is no poultry or piggery or goatry in the village because of religious and awareness problem. Therefore, there is an urgent need to take some projects to tackle the problems in the village and for overall development of the village.

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