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# Knowledge about the Pest Management Strategies to Improve the Socio-economic Profile of Chawnhu and Thingkah Villages of District Lawngtlai

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***Authors' contributions***

*This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.*

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## ABSTRACT

The present study describes the Socioeconomic Status and Knowledge about the pest management strategies Lawngtlai district, Mizoram. The two villages viz. Chawnhu and Thingkah of this district are selected for the implementation of the research. A designed questionnaire was designed to collect the information about the targeted objectives. Efforts were made to have one-to-one interaction with the farmers. A total number of fifty farmers have been selected randomly from each village and revealed that the farmers are very poor backward and has very poor knowledge about the pest, natural enemies, and recently developed pest management strategies. There may be very much less expertise about the rural techniques and with no focus on their stepped forward management practices. But was also felt that the farmers are keen to learn and apply the recently developed strategies which may improve the socio-economic standard moreover, it can be triggered by introducing facilities of modern technology such as Information and communication tools in the management of crop pest.

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## 1. INTRODUCTION

Lawngtlai district is one of the eleven districts of Mizoram state in India. The district is bounded on the north through Lunglei district, on the west by Bangladesh, on the south with the aid of Myanmar, and on the east by means of Siaha district. The district occupies a place of 2557.10 km2. Lawngtlai is situated 239 kilometers from Mizoram capital Aizawl, which has an elevation of 846 meters and latitude 21.5822.69N and longitude 92.30-93 E'. The Metropolis is the executive headquarters of the district. The district shares its boundaries with Lunglei and Siaha districts in the north and south respectively. The inhabitants of the district are especially the ethnic corporations of tribes like Pang, Lai, and Chakma, who are many of the minor tribal groups of Mizoram. The primary profession is the cultivation and the agricultural population in large part relies upon agriculture for his or her subsistence [1]. The bodily function is mainly hilly except with a long slim strip of the low-lying area along the western aspect of Chamdur Valley [2].

This district is economically most backward in Mizoram state. It was also revealed nearly sixty two percent of the population earn their live hood primarily from agriculture and the remaining are earning from the service or business (2%). They are so remotely placed, have low literacy rate (67%) and lack of recently developed agriculture technologies, as a result most of them (38%) they are below the poverty line (BPL) [3]. Moreover, they have a communication barrier as the majority of them understand and use Lai language only.

This region has heavy rainfall (approx. 2450 mm annual) and rains are used for irrigation purposes. The major land use is built-up land, Agriculture and forest, water bodies. The wetland rice cultivation is very common and is the only crop cultivated in the Kharif season. However, in the rabi season, few vegetables like mustard, cauliflower etc were grown in small patches. Plantation of Orange, Banana and Pineapple etc. have been practiced.

## 2. MATERIALS AND METHODS

This study was conducted with a sample of 100 farmers of two villages of the Lawngtlai district of Mizoram. A multistage purposive cum random sampling design was followed for the selection of the respondent [4]. The main aim behind this study was to study the socio-economic status and knowledge about pests, natural enemies, and pest management strategies of the farmers in villages viz. Chawnhu and Thingkah. The data were collected by personal interview method using both schedule and semi-structured interview supplying questionnaire mentioning the salient points. After completion of the socio-economic survey, a total of 100 filled-in questionnaires were received and analysed to find out the socio-economic status of farmers of these villages [5].

## 3. RESULTS AND DISCUSSION

The present study describes the socio-economic status and knowledge about pests, natural enemies, and pest management strategies of the farmers of North Eastern Region backward poor farmers of Lawngtlai district of Mizoram. The study area was Chawnhu and Thingkah which revealed that they are very poor backward farmers with a literacy rate of more than 85 percent and not well conversant of most recently developed agricultural strategies of the crop they sow rice, maize, soybean, sesame, ginger, strawberry, okra, tomato etc with no information about recent advances in crop management strategies. The average population of the Chawnhu village is estimated as 658 and the average family structure for nuclear and joint is 45% and 87%. The average population is 1300 for Thingkah and the average family structure for nuclear and joint is 65% and 12% respectively.

The family structure varied among both the villages as the percentage is nearly double in Thingkah village for Nuclear families compared to Chawnhu whereas for joint families structure could be very low in Thingkah compared to Chawnhu. The housing facilities are very poor and a huge percentage i.e. 97-98% reside in the kaccha houses but the electricity facilities are available in both the villages. The 50% population in the Chawnhu is dependent on the ponds for their water requirements. Being the poor farmers, the major transport used by them is the public transport or two-wheelers. The landless farmers are approx., 25% and 48.3%, marginal are 45% and 75.2% and small farmers

are 30% and 8.3% in the said villages I and II. Agriculture of the primary source of livelihood for the overpowering majority of the farmer's population. It's miles obligatory to pick out and quantify the socio-monetary factors which might be key elements that might be inhibiting their growth and development. The North eastern region farmers are not advanced as the people from the rest of India. By introducing facilities of modern technology, their socio-economic standard can be improved. The information collected is given in Table 1.

**Table 1. Socioeconomic Status of Villages Lawngtlai, Mizoram**

| S. No | Component | | Chawnhu (Village 1) | Thingkah (Village II) |
|---|---|---|---|---|
| 1 | Average Population of the District/Block/Village | Village | 658 | 1300 |
| 2 | Average Family Structure (%) | Nuclear | 45% | 87% |
| | | Joint | 65% | 12% |
| 3 | Average Educational Status of the Family members | Illiterate | 13% | 6.2% |
| | | High School | 9.2% | 4% |
| | | Graduate | 2% | 0.3% |
| 4 | Average Housing Conditions | Kaccha House | 97.4% | 98.2% |
| | | Pucca House | 1.6% | 1.8% |
| 5 | Electricity facility | Electrified | 100% | 100% |
| | | Un-electrified | Nil | Nil |
| 6 | Source of Water | Tube Well | 2% | Nil |
| | | Hand pump | Nil | Nil |
| | | Pond | 50% | Nil |
| | | River | 48% | 100% |
| 7 | Mode of Transportation | Two wheeler and Public transport | Two wheeler and Public transport | Two wheeler and Public transport |
| 8 | Major Land Holdings | Landless | 25% | 48.3% |
| | | Marginal | 45% | 75.2% |
| | | Small | 30% | 8.3% |
| 9 | Source of Irrigation | Tube well | Nil | Nil |
| | | Ponds | 10% | Nil |
| | | Others - Rainfed | 50% | 65.5% |
| | | River | 40% | 34.5% |
| 10 | Farm Mechanization | Tractor | 1.2% | Nil |
| | | Pump | Nil | Nil |
| | | Sprayer | 0.4% | 34.5% |
| | | others | Nil | 12% |
| 11 | Livestock | | Cow, buffalo, goat, poultry, duck, pig and fish pond | Cow, goat, poultry, duck, pig and fish pond |
| 12 | Difficulties in Agriculture Improvement | Irrigation | 20% | 30% |
| | | Credit | 30% | 20% |
| | | Transport | 35% | 25% |
| | | Agri Knowledge | 5% | 20% |
| | | Labour | 10% | 15% |
| 13 | Source of Agricultural Information (Extension staff, Mass Media and Relatives) | | Extension staffs from KVK, Agriculture, Horticulture, Fishery, AH &Vety, Sericulture | Extension staffs from KVK, Agriculture, Horticulture, Fishery, AH &Vety, Sericulture |

| S. No | Component | | Chawnhu (Village 1) | Thingkah (Village II) |
|---|---|---|---|---|
| | | | Department, ATMA staffs and Mass media. | Department, ATMA staffs and Mass media. |
| 14 | Sources of Credit Supply (Cooperative society etc) | Gov't Servant<br>Agriculture | 15%<br>85% | 13%<br>86% |
| 15 | Cropping Pattern | | WRC, Terrace, Hill slope | Terrace & Hill slope |
| 16 | Marketing System of Agricultural Produce | Local traders | 30% | 40% |
| | | Village market | 40% | 20% |
| | | Middle man | 30% | 40% |
| 17 | Soil type | | Sand-loamy and clay-loamy | Sand-loamy and clay-loamy |
| 18 | Average Pesticide used (/ha) | | 0.02kg/ha | 0.03kg/ha |
| 19 | Knowledge about IPM | | No proper knowledge | No proper knowledge |

The major occupation of the backward poor farmers was agriculture and livestock rearing. The majority of farmers or almost all farmers come under categories BPL secured less than one-hectare land. The cropping pattern of the studied area includes both Rabi and Kharif crops in which more than 30% of the total area is covered by vegetables in Rabi season and the remaining area is covered by mustard, cauliflower. In the Kharif season, about 80% of agricultural land has wetland rice cultivation. The farmers do not have much knowledge regarding crop production, only 5-12% of farmers growing vegetable crop in both the selected studied villages. During the survey, it was also observed that there are many pest, natural enemies are thriving in these villages, but farmers have no/less knowledge about these and have no knowledge about recently developed pest management strategies.

## 4. SUGGESTIONS

The present studies has few policy suggestions hereunder:

Creating Awareness and facility of quality education may on virtual mode.

- ♣ Creating awareness to check the exploitation of backward poor farmers.
- ♣ Good, reliable communication facilities should be provided to improve agricultural production. Extension agencies /experts must regularly visit the villages and interact with farmers.
- ♣ Regular virtual mode Farmer Field Schools.
- ♣ Identification pictorial guide for pests and natural enemies must be prepared and distributed to these farmers.
- ♣ Resource mobilization.
- ♣ Multiple cropping and intercropping should be actively encouraged.
  The government must make major moves to create permanent assets with backward farmers and provide infrastructural support for meeting input, credit and marketing needs.
- ♣ Inventory of quality critical inputs must be prepared and made available to them.
- ♣ Regular training should be provided to the backward farmers in different income-generating activities.
- ♣ Suitable steps should be taken by the Government/administrative agencies so as to educate the tribal farmers about the importance of crop loan and crop insurance facility to enhance their resources.

## 5. CONCLUSION

ICT can be a possible tool for improving the socio-economic status of the farmers of the selected villages of the district as development is not about technology or information, it is about the economic and social empowerment of the society. The access to tools and techniques in the region many times hampers the development of farmers. These information tools can help in participation, knowledge-sharing, and hence in the development of social status. A more number of Extension agencies/ workers/ scientists must visit the villages and interact with farmers to develop linkages and trust and hence upliftment and training should be provided to these farmers in different income-generating activities and knowledge enhancement.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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