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# Village Development Through Crop Diversification in a Peri Urban Setting

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**Abstract**

The declining productivity of certain crops and enterprises is of major concern to not only farmers but also other stakesholders including the policy makers and development workers. Alternative farming systems form the prime mover of agricultural diversification. The changes in the cropping system should ensure a reasonable profit apart from providing food, nutrition and employment security. Understanding these systems is complex and more so altering the system unless practiced under a strong compulsion. In this connection, Periyaoblapuram village in Tiruvallur district of Tamil Nadu was selected to study the pattern of diversification of crops and its implications for socio-economic betterment.

## Introduction

A acute food shortage was the major problem confronting the development of the country in the post-independence era. Although the introduction of green revolution technologies resulted in self sufficiency in food, the positive impact has not spread to major parts of the country including the rainfed agro-ecological regions. While some of the productive zones/villagers effectively exploited the available opportunities including the advantages of peri urban facilities, others still lag behind the developmental paradigms. Focusing such improved villages in terms of farming situations, resource availability, needs and aspirations under different socio-economic and cultural backgrounds will sensitise other villages to reach the optimum level of socio-economic development. Several experts emphasise the meaningful diversification of crops at village level for enhancing the income of resource poor farmers (Bhalla and Gurmail Singh, 2001) In this backdrop, a study was undertaken to ascertain the dynamics of diversification in terms of various farming situations, practices, resources and constraints of a progressive village.

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**Methodology**

The study was conducted in Periyaoblapuram village, situated in Gummidipoondi taluk, Tiruvallur district of Tamil Nagu. The village is situated 45 KM north of Chennai.

The selection of the village was facilitated by information provided by the extension agencies working in Tiruvallur district. Periyaoblapuram is one of the few villages which is successfully harnessing the market opportunities prevailing in the region and farmers of this village diversified agriculture in favour of horticultural crops. The data were collected using participatory rural appraisal techniques (PRA) in the month of January, 2005. The major PRA tools used in the study were a village map, transect walk, time line, trend analysis, problem cause diagram and focused group interaction. The collected data was cross checked through triangulation.

**Socio-cultural setting of Periyaoblapuram**

The elders of the village through focused group interaction revealed that Periyaoblapuram village got its nomenclature in such a way that two sisters namely Periya Obi and Chinna Obi lived there. The village where Periya Obi got married became Periyaoblapuram and where Chinna Obi got married became Chinnaoblapuram which is nearer to Periyaoblapuram. This village has 400 families, out of which 100 are from dalits and rest are from other castes which mainly consists of vanniars followed by 10 carpenter families, 5 dhobies, 4 barbers and 20 fishermen families. Sixty per cent of houses are thatched and 40% are pucca houses. While 90 per cent of villagers were land holders, the rest (10%) were land less.

The major occupation of the villagers is farming. At least one member of 15 per cent of the families works in SIPCOT (Small Industries Promotion Corporation of Tamil Nadu) industrial park, situation at Gummidipoondi, 7 Km away from the village. There are six temples and one church apart from two schools and a primary health centre. Communal harmony is maintained as villagers are always busy in their farming activities and unemployment is not a problem.

**Village resources**

As observed through deployment of various PRA tools, the village possesses a big water tank, 3 ponds and one common threshing floor. The total land available in the village is 545 hectares with the distribution pattern viz., wet land (70 ha) dry land (281 ha), poramboke government

land (183 ha) tank and ponds (72 ha) and grazing land (35 ha). The village population is around 2500. There are 2 fair price shops, 4 overhead tanks, post office, library, panchayat office, primary agricultural cooperative society (at Elavur) etc. The soil is of sandy clay loam type with soil EC (Electrical Conductivity) varying from 0.1 to 0.6 and soil pH variation from 7.4 to 8.4 (Anonymous, 2005). There are 100 open wells of which many are fitted with pumpsets and 10 borewells.

**Time line**

The historical occurrence of various events in the village is depicted in the Table-1

**Table 1**

Time line of the village

| Sl. No | Year | Events |
|---|---|---|
| 1. | 1925 | Cycle |
| 2. | 1938 | Primary School |
| 3. | 1950 | First Degree holder |
| 4. | 1962 | Panchayat |
| 5. | 1965 | Post office |
| 6. | 1975 | Radio |
| 7. | 1976 | Electricity |
| 8. | 1989 | Flower cultivation |
| 9. | 1989 | Oil engine |
| 10. | 1989 | Primary Agro, Coop. Society |
| 11. | 1990 | Metallic Road |
| 12. | 1990 | Television |
| 13. | 1994 | Motor Cycle |
| 14. | 1994 | Tractor |
| 15. | 1998 | Cylinder |
| 16. | 1999 | Cable TV |
| 17. | 2002 | Telephone |
| 18. | 2002 | Mobile Phone |
| 19. | 2004 | Primary Health Centre |
| 20. | 2005 | Library |



**Cropping particulars**

The Table 2 dep
horticultural crops gro

| Sl. No | Crops |
|---|---|
| 1. | Paddy |
| 2. | Groundn |
| 3. | Gingelly |
| 4. | Ragi |
| 5. | Black gra |
| 6. | Green gra |
| 7. | Cowpea |
| 8. | Brinjal |
| 9. | Bhendi |
| 10. | Chilly |
| 11. | Radish |
| 12. | Greens |
| 13. | Tapicoca |
| 14. | Sweet pot |
| 15. | Banana |
| 16. | Jasmine |
| 17. | Crossandra |
| 18. | Rose |
| 19. | Kakkattan |
| 20. | Mango |
| 21. | Guava |
| 22. | Coconut |
| 23. | Palmyrah |
| 24. | Tamarind |
| 25. | Neem |
| 26. | Moriaga |
| 27. | *Tephrosia p* |
| 28. | Banyan Tre |

**Cropping particulars**

The Table 2 depicts the area under various agricultural and horticultural crops grown in the village.

**Table 2**

Area under different crops

| Sl. No | Crops | Area/No trees |
|---|---|---|
| 1. | Paddy | 200 acre |
| 2. | Groundnut | 250 acre |
| 3. | Gingelly | 70 acre |
| 4. | Ragi | 25 acre |
| 5. | Black gram | 4 acre |
| 6. | Green gram | 4 acre |
| 7. | Cowpea | 15 acre |
| 8. | Brinjal | 40 acre |
| 9. | Bhendi | 15 acre |
| 10. | Chilly | 40 acre |
| 11. | Radish | 12 acre |
| 12. | Greens | 25 acre |
| 13. | Tapicoca | 25 acre |
| 14. | Sweet potato | 10 acre |
| 15. | Banana | 15 acre |
| 16. | Jasmine | 75 acre |
| 17. | Crossandra | 2 acre |
| 18. | Rose | 15 acre |
| 19. | Kakkattan (*Jasmininum multiflorum*) | 12 acre |
| 20. | Mango | 350 trees |
| 21. | Guava | 25 trees |
| 22. | Coconut | 250 trees |
| 23. | Palmyrah | 50,000 trees |
| 24. | Tamarind | 500 trees |
| 25. | Neem | 400 trees |
| 26. | Moriaga | 500 trees |
| 27. | *Tephrosia purpurea* tree | 45 trees |
| 28. | Banyan Tree | 20 trees |

## Animal Particulars

The existing livestock in the village is indicated in the Table 3.

**Table 3**

Number of animals in the village

| Sl. No. | Name of the animals | Number |
|---|---|---|
| 1. | Cross Bread Cattle | 135 |
| 2. | Local Cattle | 15 |
| 3. | Buffaloes | 400 |
| 4. | Bullocks | 60 |
| 5. | Sheep | 60 |
| 6. | Goat | 400 |
| 7. | Poultry | 1200 |
| 8. | *Pigeon birds* | 75 |

## Trends Analysis

The villagers indicated that they diversified from agricultural crops to horticultural crops during the last 10 years. The rainfall has become erratic and uneven over the years. The ground water level has constantly gone down. The labour availability during peak agricultural seasons has become a problem. The small ruminant population (sheep and goat) has come down. The area under flower cultivation has increased.

## Crop Diversification

Altering the cropping pattern on the one hand helps the growers to improve their income and diffuses risk and on the other hand, provides more alternatives of food items to the consumers. Demand side factors of diversification are urbanisation and income levels and supply side factors are relative profitability, technology, infrastructure, farm size and natural resource base (Singh *et al.*, 2005). Farmers of Tiruvallur district used to mainly follow the paddy based production system using the rain dependent water tanks. The usual problems associated with monocropping of rice in water assured irrigated areas and groundnut in rainfed areas supported a declining trend of yield and income were explained to the farmers. The farmers were, however, not receptive to

suggestions to change to an alternate cropping system fearing problems of marketing and performance of new crops. However a few villages became models for others by diversifying their crop cultivation. The Periyaoblapuram village also diversified from the rice and groundnut based cropping system in favour of several horticultural crops. The village initiated the process of diversification with flower cultivation and made remarkable achievements.

Mr. Marimuthu and Mr. Chellan, the two farmers of the village brought flower seedlings of Jasmine from Rameswaram in 1989 and introduced the flower cultivation which has not only increased employment generation in terms of man days, but also substantially enhanced the economic status of flower growers. Farmers later on also started cultivating crossandra, rose and kakkattan and also vegetable crops such as topioca, sweet potato, cowpea, brinjal, bhendi, chillies, cumbu cluster beans, radish, greens etc. The income provided by the diversification activities is not only used for household consumption, but also serves as a capital source for further investment (Meert *et al.*, 2005). An empowered and informed integration of small holders into markets can lead to significant poverty impacts and enables them to realise the full economic potential of their assets and to put them on an upward ratchet (Debroy and Khan, 2004). The crop diversification gets accelerated when the infrastructure facilities such as market, irrigation, electricity, metallic roads and modern inputs are available to yield high returns (Chahal and Prehar, 1996 and Khatkar *et al*, 1996).

**Unique features of Periyaoblapuram village**

The features of Periyaoblapuram village that make all the difference to elevate its status as a progressive village are enumerated as under:

1. The Government of Tamil Nadu shifted the main moffusil bus stand from Parrys Corner to Koyampedu in Chennai which has intensified the already flourishing vegetable and flower market. The Koyampedu town is 35 KM away from the village, well connected with transport facilities which enable the villagers to easily market their farm produce.
2. Although the major chunk to vegetables and flowers still arrive from Bangalore (which is 350 Km away from Chennai) farmers of this village with a favourable support from traders find considerable scope to market their produce in the Koyampedu market.

3. The traders provide financial assistance in the form of pre-harvest contracts for flowers cultivation and hence capital was not considered as a constraint in farm production in this village.
4. Villagers function as commodity-specific groups as far as marketing is concerned which includes arrangement of transport, loading and unloading the produce, negotiation of price with traders and payment of price for the produce. This group approach very visible among the small producers.
5. Engaging in diversified crop cultivation facilitates full time employment for all the family members in the village.
6. The small farmers also used to exchange the family labour for carrying out various farming operations which considerably reduced the cost of production.
7. The villagers generally avoid the huge expenditure for celebration of social events like marriage, festivals and various other events which are normally practiced in the Hindu religion.
8. The villagers utilise each and every mode for marketing of their produce like direct sale of fruits in local trains, dairy products in nearby villages, group sale of farm produce to commission agents and traders.
9. The farmers of the village maintain a close linkage with government extension agencies. The farmers take self-initiative to approach extension agents directly to get their problems resolved.
10. Farm families generally prepare rice or ragi only one time in a day and make idly or dosa per week or fortnight. However, owing to nearness to coastal areas, they cook fish 2 to 3 times in a week. Lifestyle disorders such as obesity, heart disease, cancer and hypertension were uncommon as noticed by the researcher in the village.

## Conclusion

Periyaoblapuram village has shown the way to the other villagers that it is possible to enhance the income and employment through efficient land use planning with diversified crop choices as well as incorporating local relevance, need, interest and the marketing prospects in a peri urban setting. Moreover, the crop diversification also stopped the migrational tendencies in addition to ensuring food and nutritional security along with environmental enrichment.

**Implications of the study**

The outcomes of this study are expected to provide an insight and new direction for successful replication of the diversification strategies in order to accelerate the pace of rural development.

1. Farmers could easily capitalise the comparative advantages of peri urban setting such as favourable market, natural setting, soil and water resources and availability of low cost labour for their socio-economic upliftment.
2. Efficient cropping systems with higher land equivalent ratio and income could be adopted as these systems address the problems of fodder for livestock, nutritional security and enough employment generation for the farm family.
3. Keeping in view the migrational tendencies triggered largely by income inadequacies, a more plausible scenario appears to be an increase in the total family income derived from diversification of agriculture through horticultural crops and value addition coupled with some gains in the productivity of the existing production systems.
4. Improved marketing and price support could be visualised for those farm products which have a wider consumption pattern in a peri urban setting.
5. Development of small and marginal holdings could be feasible through cooperative efforts of farmers in arranging input, marketing, storage, transportation etc. Commodity-specific groups play a key role in this regard.
6. Agricultural policy is heavily biased in favour of foodgrains and is effected mainly through food subsidies and pricing policies like minimum support price and procurement policies of Food Corporation of India. The lack of infrastructure for the production of non-cereals like good roads and cold storage chains is affecting diversification. The correct approach to encourage diversification is to take away the price incentives for both outputs and inputs of cereal production.

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