

**REPORT OF FEASIBILITY STUDY
ON NATURAL RESOURCE MANAGEMENT IN KRISHNAGIRI DIST, TAMIL NADU**

8 December 2014
Submitted by Mr. Mudunuru Ramaraju
and Ms. Kyoko Maekawa

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1. Introduction

(1) Background of Feasibility Study

As SOMNEED has implemented projects in Visakhapatnam and Srikakulam district in Andhra Pradesh for more than 2 decades, SOMNEED has accumulated facilitation skill and experiences in the field of micro finance and natural resource management. Moreover SOMNEED came to the stage to think to apply the concept and techniques to other state.

After several discussions the state of Tamil Nadu was picked up and the district of Krishnagiri was selected to conduct feasibility study in regards of natural resource management.

Since 2013 we, SOMNEED, collected data and information about Krishnagiri Dist and conducted pre-preliminary study in March 2013. To investigate the situation by adding the aspect of government policy, with a help of 2 experts in the field of Forestry and Agriculture, study team was formed and conducted the feasibility study.

(2) **Duration;** 3rd to 5th November 2014 and 9th to 15th November 2014

(3) **Venue;** Chennai city and Krishnagiri District in Tamil Nadu

(4) **Team member;**

- Dr. R. K. Sivanappan ; Retired Professor of Department of Agricultural Engineering, Agricultural University, Coimbatore, Tamil Nadu
- Mr. M. Thinakaran ; Retired Chief Conservator of Forests, Government of Tamil Nadu
- Mr. Nobuaki Wada; SOMNEED
- Mr. Mudunuru Ramaraju; SOMNEED
- Ms. Kyoko Maekawa; SOMNEED

(5) **Itinerary**

Date	Programme	Place
03 Nov	➤ Travel: Ms. Kyoko Meakawa from Japan to Chennai ➤ Travel: Mr. Mudunuru Ramaraju from Visakhapatnam to Chennai ➤ Travel: Dr. R.K. Sivnappan from Coimbatore to Chennai	Chennai
04 Nov	➤ Meeting To discuss about the study, collection of data/information about government schemes and to prepare the schedule for Krishnagiri field study	Chennai
05 Nov	➤ Travel: Dr. R. K. Sivnappan from Chennai to Coimbatore ➤ Consolidation of data and information gained during meeting and logistics arrangement (Ms. Kyoko and Mr. Ramaraju)	Chennai

06 Nov	➤ Travel: Ms. Kyoko Meakawa and Mr. Mudunuru Ramaraju from Chennai to Visakhapatnam (Due to flight cancel on 5 th November)	
07-08 Nov	➤ Consolidation of data and information ➤ Logistics Arrangement	Visakhapatnam
09 Nov	➤ Travel: Mr. Sivanappan from Coimbatore to Bengaluru ➤ Travel: Mr. Thinagaran from Chennai to Bengaluru ➤ Travel: Mr. Ramaraju and Ms. Kyoko from Visakhapatnam to Bengaluru ➤ Travel: Mr. Wada from Japan to Bengaluru	Bengaluru
10 Nov	➤ Brief meeting ➤ Proceed to Hosur ✓ Visit DFO's office ✓ Collection of data on forestry ✓ Meeting with Agricultural, Agricultural engineering and horticulture departments officials ➤ Field Visit -1 (Poly House Cultivation)	Hosur town, Krishnagiri Disrict Baglur Village, Hosur Taluk
11 Nov	➤ Visit to Collector's office ✓ Meeting with officials of Agriculture Department, Horticulture Department, Agriculture Engineering Department	Krishnagiri town
	➤ Field visit -2 (Government Scheme; Massive Tree Plantation)	Bollupalli Vilage
	➤ Field visit-3 (Government Scheme; Tree Cultivation in Private Lands and Drip Irrigation) ➤ Field visit-4 Government Scheme; TCPL and Tank Bed Plantation)	Chinipularisa Village Bandarapalli Village
12 Nov	➤ Field visit-5 (Government Scheme; Check Dam and Percolation Pond)	Chinamarattanapa lli Village &Keelpoonkuruth i Village
	➤ Field visit-6 (Government Scheme; Integrated Watershed Management Programme) ➤ Reflection session	Madhanakuppam Village Krishnagiri town
13 Nov	➤ Visit Regional Research Station, Tamil Nadu Agriculture University	Paiyur Village
	➤ Field visit-7 (Government Scheme; Farm Pond) ➤ Field visit-8 (Interaction with villagers)	Vagampatti Village Jagdab Village
14 Nov	➤ Winding up ➤ Proceed to Bengaluru	Krishnagiri town Bengaluru
15 Nov	➤ Travel: Mr. Sivanappan from Bengaluru to Coimbatore ➤ Travel: Mr. Thinagaran from Bengaluru to Chennai ➤ Travel: Mr. Wada, Mr. Ramaraju and Ms. Kyoko from Bengaluru to Visakhapatnam	

2. List of Interviewees:

Sl.No.	Name	Designation	Department/Village
1	Mr. Soundararajan	Asst. Conservator Forest	Forest Department, Hosur
2	Ms.Rajeswari	Senior drafter	District Forest Office, Hosur
3	Mr. Paneer Selvam	Divisional Forest Officer	Forest Department
4	Mr.Raphael Reddy	Forest Extension officer	Forest Department
5	Mr. Tamil Selvan	Joint Director	Agriculture Department
6	Mr. Ramalingam	Asst. Director	Agriculture Department
7	Mr.Ganesh Kumar	Agricultural Officer	Agriculture Department
8	Mr.R.Srinivasan	Agricultural Officer	Agriculture Department
9	Mr.Ravi	Agricultural Officer	Agriculture Department
10	Mr. S. Dhanapal	Asst. Engineer	Agricultural Engineering Department
11	Mr. Gunasekharan	Asst. Executive Engineer	Agricultural Engineering Department
12	Mr. Venugopal	Executive Engineer,	Engineering department
13	Mr. Ramesh Y. Nargund	Asst. Director Horticulture	Horticulture Department
14	Mr. Sinthilkumar	Horticultural Officer	Horticulture Department
15	Mr. Sinthilkumar	Horticultural Officer	Horticulture Department
16	Prof. M. L. Budhar	Head of Department	Regional Research Station, Paiyur
17	Mr. Vijaya Bhaskar	Agronomist	Regional Research Station, Paiyur
18	Mr. Vadivel	Agronomist	Regional Research Station, Paiyur
19	Mr. Hanuma Reddy	Farmer	Baglur village
20	Mr.Ramamurthy	Farmer	Chinapuliarisa village
21	Mr. Balachander	Farmer	Chinamarattanapalli Village
22	Mr. Raddanamai	Farmer	Chinamarattanapalli Village
23	Mr. Rajavelu	Farmer	Keelpoonkuruthi Village
24	Mr. Raja Mahalingam	Farmer	Jagadab Village, Kaveripattinam Block
25	Mr. Sabaresh	Farmer	Jagadab Village, Kaveripattinam Block

3. Field Visit Report

Field visit-1 (10 November 2014)

Hosur, a municipal town and Taluk headquarter, is 40 km away from district head quarter; Krishnagiri town. Hosur is popular for polyethylene greenhouse farming particularly for flowers and vegetables. Most of the farmers are availing government subsidy as well as the market potentiality in Bengaluru (formerly known as Bangalore) and Chennai.

The area linked between Hosur and Krishnagiri is called industrial belt. There are many factories and offices of national and international company.

Horticultural farming is predominant in this district and hence a number of schemes sponsored by state and central governments are in operation.

According to hearing from Mr. Ramesh Y. Nargund, Assistant Director of horticulture, Krishnagiri, on-going schemes are;

- ✓ Integrated Horticultural Development scheme
- ✓ Precision Farming
- ✓ Development of State Horticultural Farms
- ✓ National Horticultural Mission

- ✓ Micro Irrigation Scheme
- ✓ National Agricultural Development Program
- ✓ Rain Fed Agricultural Developmental scheme

And the major crops raised in this area are;

- ✓ Fruits- Banana, mango, guava, sapota and papaya
- ✓ Vegetables- tomato, french beans, cassava, carrot, beet root, ladies finger, cucumber, onion, greens
- ✓ Flowers- chrysanthemum, marigold, jasmine, rose, gerbera
- ✓ Spices and condiments- chillies, mint, coriander, turmeric, tamarind

With those information study team visited the polyethylene greenhouse where the method of raising gerbera with drip irrigation adopted by Mr. Hanumareddy of Baglur village near Hosur. The greenhouse spreads over 0.5 acre and flower plants are watered through drip irrigation which water source is open well in his premises. He sells the cut flowers in Bengaluru and also sends them to Andhra Pradesh. Horticulture department provided 50% subsidy to this polyethylene greenhouse cultivation. To cover the balance 50% cost, he took loan from private bank. He is selling 2,000 pieces of cut flowers at Rs.3 to 6 per piece depends on variety and season to Bengaluru market every day and earns around Rs. 200,000 per month.

Study team observed the usage of chemicals to prevent weeds growing outside of greenhouse. To maintain the greenhouse cultivation a farmer has to hire a few labours.

In this area flowers are cultivated under protected as well as open method. Chrysanthemum (968 ha), Jasmine (826 ha), Marigold (753 ha), and Roses (258 ha) are cultivated under open method under which cultivation is done in the open fields same as being practiced for other field crops.



Photo 1) The vehicle carrying flowers from Hosur to Bengaluru

Protected method of cultivation is prevalent in Hosur taluk using either polythene greenhouse or shade net (cover over the plants to prevent direct sunshine). This method is being used mostly for producing cut flowers or coloured capsicums. The flowers commonly raised are Roses, Gladiolus, Gerbera and Arum Lily.

Drip irrigation, at times combined with sprinkler irrigation is the chief mode of watering the plants. Cut flowers are great demand in Bengaluru which is about 40 km from Hosur. “National Mission for Micro Irrigation” gives liberal subsidy for micro irrigation.

Field Visit-2 (11 November 2014)

According to the explanation by Ms. Rajeswari, senior drafter, District Forest Department, Hosur, forests vested with Forest Department comprise 149,629.70 ha of which reserved forests account for 141,578.75 ha and reserved lands 8,050.95 ha.

The district forest officer of Hosur forest division (territorial) controls the management, protection and administration of the entire forests of Krishnagiri district.

Divisional Forest Officer, IFF (Inter Face Forestry) division, Krishnagiri implements raising nursery, maintenance and harvesting Acacia plantations on tank beds under the control of local bodies and Public Works Department.

The team visited Sajee Garments Factory, Bolupalli village where one of Forest Department

scheme named “Massive Tree Plantation Programme” has been conducted. The varieties of tree planted are Rose wood, Silver oak, Country almond, Planters delight and Pterocarpus. The aim of scheme is to expand the greenish area in the State by planting more saplings in private/public area.

Field Visit-3 (11 November 2014)

According to the sharing by Mr. Ramesh Y. Nargund, Assistant Director of Horticulture, the area and production in this area can be shown as below;

Area and production

	Area in Ha	Production in MT
Fruits	40,163	376,437
Vegetables	23,228	722,004
Spices and condiments	4,161	6,821
Flowers	3,370	21,184

Besides Krishnagiri district occupies the pride of place in mango cultivation. Cultivated over 39,203 ha where produces 323,425 tons of fruits annually. Mango is raised both under rain fed and irrigated conditions. About 70 small scale factories are engaged in making mango pulp. Alphonso mangoes are exported.

Banana is cultivated in 756 ha in wet lands as also garden lands. Under “Micro irrigation scheme” subsidy is given for garden land cultivation of banana. Guava, Sapota and Papaya are cultivated on a small scale.

Regarding vegetable cultivation, Tomato is the major vegetable crop and is being raised in 9,837 ha followed by potato (1,801 ha), beans (1,545 ha), brinjal (eggplant) (1,539 ha), cabbage (1,134 ha), cauliflower (433 ha) and carrot (358 ha) both under rain fed and irrigated conditions.

When the study team visited the field of Chinapularisa village we had interaction with Mr. Ramamurthy, a farmer. Out of the 4 acres of land he owns, 2 acres are under rain fed agriculture in which he has raised mango with cow pea as intercrop and teak along the bunds. Cow pea is used as vegetable, fodder and it is helpful to control weed also.



Photo 2) Mr. Ramamurthy and his farming land adapting drip irrigation

In the balance 2 acres farming land, from the bore well(550 feet depth) which he has dug 6 years ago, he has raised banana with drip irrigation with onion as intercrop and planted coconut and teak along bunds. A small patch has been planted with rice to meet domestic consumption. He practices organic farming exclusively but he uses tractor for tilling the land. He owns a tractor and three cows.

He used cultivate paddy till 2012 in the land where now banana is cultivated by using the

bore well water as well as rain water. During the year 2013 he got a scheme for drip irrigation worth of Rs.80,000 for 2 acres from Horticulture Department. The scheme from Department is totally used to buy PVC pipes for drip irrigation, and he met the incidental expenditure of Rs.20,000 (transportation and miscellaneous cost towards company workers) and the cost of banana suckers and other investments. He availed interest-free-loan Rs.50,000 from cooperative bank, if it is cleared in one year.

Besides banana plantation, he took up teak plantation on the bunds with the support of Forest Department. The seedlings and the plantation cost are provided by Forest Department under the scheme of Tree Cultivation in Private Lands (TCPL). The tree shave put in excellent growth of 6 meter in 18 months. At the end of third year, the farmer gets a cash incentive for each surviving sapling.



Photo 3) Team members interacting with a farmer

When he was 20 years old their family used to consume more chemicals for paddy cultivation and he got married at the age of 27 years old. At that time he got the arthritis and not able to work for long time in the field. One day he thought the reason for the arthritis and doubted the consumption of rice which had been cultivated by using more chemicals in his field. Then he decided to try cultivation without using chemicals and started.

The family started consuming the rice from the same field which is cultivated with farm yard manure and poultry manure. He owns a tractor and

2 cows. And he has no leg pains now though he is 40 years old and he can work throughout the day. He is propagating his experience to other farmers to do cultivation in organic way by having cows. Many people asked him to sell his organic rice but no surplus to sell. The yield is 3,000 kg per acre. He is earning Rs. 150,000 every year.

He shifts the drip irrigation setup from one site to another every year to change the cropping pattern; from banana to paddy and vice versa. The drip irrigation setup is arranged in banana plantation. Even though having the irrigation facility in the land, he is able to utilize the land for 9 months a year. After bananas are harvested the land is kept idle for 3 months.

After the installation of drip irrigation setup, investment to farming, the quantity of weeds and labour works are reduced. He assumes that around 10% of income is increased.

On the way back from this field, the team members observed the combined-machine for harvest-cut-thresh of paddy several times.

Field Visit -4 (11 November 2014)

According to the explanation by Ms. Rajeswari, senior drafter, the on-going schemes under Forest Department are;

- ✓ Massive Tree Plantation Programme
- ✓ Tree Cultivation in Private Lands (TCPL)
- ✓ Tamil Nadu Biodiversity Conservation and Greening Project (TBGP) assisted by JICA
- ✓ Tank Bed Plantation

After interaction with Mr. Ramamurthy, a farmer, the team visited the site of TCPL which land belongs to Mr. Madhaiyan of Ragimanapalli village, unfortunately we could not meet him. The varieties of tree growing in the site are Teak, Melia, Silver Oak, Eucalyptus and banana. Melia has

grown well but has suppressed the growth of teak, eucalyptus and banana.

The initial concept of TCPL was to select and plant the varieties with the ratio of 70 % of long term species and 30 % of short term. But the varieties we observed in the site are mostly long term species and whatever a farmer wants.

The team visited next site for the Tank Bed Plantation. The 10,120 seedlings of Acacia Nilotica are raised, which were planted in 10.74 hectares in 1985. The trees were felled in 1995, 2006 and again to be felled in 2016.

From the income of the harvest, 35% would be deducted for administration cost and rest of 65% would be shared in ratio of 60% to the community (Rs. 26,944 in 2006) and 40% to the department. The wood is used for fuel and paper making. The seedling can be survived, if it has not got water logging in 30 days after planting. Once it starts to grow, it can tolerate water logging.

The major important trees, shrubs, herbs and grasses found in the forests are listed below;

- ✓ Trees- Sandal, Rosewood, Neem, Tamarind, Terminalias, Gooseberry, Soap nut, Pterocarpus, Acacias, Bamboos and Satinwood.
- ✓ Shrubs – Lantana, Dodonaea and Carissa
- ✓ Herbs- Cassia, Indigo
- ✓ Grasses- Broom grass, Speat Grass and Apluda

Also, a forest extension centre is functioning on the outskirts of Krishnagiri under the management of Forest Extension Officer, Krishnagiri. Demonstration plots have been laid in this centre to educate the farmers about tree husbandry. Training programs for farmers, NGOs, village forest council members and also field staff are conducted periodically on nursery practice, vermin compost, joint forest management etc.

The Forest Extension Officer also undertakes planting of timber species in private lands by free cost under TCPL component of TBGP.

Field Visit-5 and 6 (12 November 2014)

The study team made a field visit with staffs of Agriculture Department and Agriculture Engineering Department (AED). AED, Krishnagiri implements the Soil and Water Conservation measures such as compartmental bunds, masonry check dams, percolation ponds and farm ponds.

The District Collector is the Chairman of Integrated Watershed Management Program for this district, while the Joint Collector of Agriculture, Krishnagiri in his capacity as the Secretary is the de facto implementer of this scheme. This agency also carries out field bund making, land levelling, summer ploughing, stone bund making, check dams, percolation ponds, farm ponds in addition to goat and calf rearing.

Needless to say, soil and water conservation works are carried out by two different agencies and many components are common. It is an irony that there is not much of co-ordination among these agencies.

The team visited the masonry check dam constructed near Varattanapalli village during 2009-10 at a cost of Rs.110,000/- . The washed-off silt from upper reaches has been found to be deposited on the upstream side of the check dam. During interaction Mr. Raddanamai, a resident of Chinamarattanapalli village opined that with the construction of this check dam water level in his well which is located downstream nearby has increased by about 10 feet in summer and 15 feet in rainy season. According to him 20-30 wells in his village have benefitted from the check dam.



Photo 4) Check dam



Photo 5) Team member was shown the IMWMP master plan sheet

bottom to top.

Field Visit-7 (13 November 2014)

According to Mr. S. Dhanapal, Assistant Engineer of AED, there is 73% of cultivated area being under dry land and steeply or gently sloping terrain with outcrops of hillocks where exists a need to take soil and water conservation measures on a more intensive scale than what is being done now.

2 agencies are implementing soil and water conservation works and they are-

- ✓ Executive Engineer Krishnagiri district Agricultural Engineering Department and
- ✓ Integrated Watershed Management Agency, the Joint Director of Agriculture, Krishnagiri in his capacity as the Secretary of the District agency

And in Krishnagiri District there are major 3 rivers named Cauvery, South Penniyar and Kattar. The important reservoirs are Krishnagiri reservoir, Pambar reservoir, Soolgiri-Chinnar reservoir and Kalevarapalli reservoir.

When we visited Regional Research Station, Paiyur, of Tamil Nadu Dr. VijayaBhaskar, Agronomist, gave us full lecture about crops in this area.

When we asked them if anybody has a plan with silted soil in check dam, nobody answered. Either staffs of Departments nor Mr. Raddanamalai did not have any prediction about continuous accumulation of silt in check dam. Department shared with us about the needs of new check dams in different points, but no system of maintenance of present check dams including de-silting work.

In the same village, a percolation pond constructed during 2009-10 at a cost of Rs.350,000 but in a different micro-watershed was visited. 30 downstream wells have benefitted from this pond.

The team was introduced about Integrated Micro Watershed Management Programme (IMWMP) planned for 5 years and under which one threshing floor was constructed in Vagampatti village to cater to the needs of 100-125 households as an entry activity. When we asked villagers on the spot about the Programme, nobody could answer clearly.

Team members found the several tools of machines in the field which were parts of tractor. One type of tractor is used once in every 3 years to make soil soft and mix the soil from

Rice is the main crop raised in Kaveripattinam, Hosur and Soolagiri blocks. After harvesting rice, finger millet or vegetables or flowers are cultivated. Banana and sugarcane are also cultivated in wet lands, that means irrigated farming.

Regarding rain fed agriculture, the main cropping season is the south west monsoon period (June-September). Finger millet is raised as a pure crop by many farmers. Under mixed cropping finger millet + red gram or fodder sorghum + lablab beans or ground nut + red gram are cultivated. A few farmers raise finger millet + Niger.

If the south west monsoon is delayed farmers raise little millet. During north east monsoon (October – December) red gram + horse gram or red gram + cow pea are cultivated.

Agriculture Department has been giving advocacies and promoting the new technique of red gram cultivation. It is to make seedlings instead of direct seed-sowing as conventional method in order to shorten the duration of cultivation. This new technique was found out by Agricultural Research Station after experiments for 4-5 years. Similarly 60 to 70% of new technique or alternatives reported by them have been adopted by Tamil Nadu government.

Besides, vegetables are transported to Bengaluru, Chennai and to a limited extent to Salem district of Tamil Nadu and Andhra Pradesh other than local markets. Particularly tomatoes, roses, gerbera, gladiolus are exported as cut flowers to Bengaluru, Chennai, Andhra Pradesh and even to Kolkata.

Mangoes after meeting the requirements of pulp industry are moved to Bengaluru and Chennai. Alphonso mangoes are exported to foreign countries though on a limited scale. Rice, finger millet and little millet are mostly sold in the local markets.

After hearing session at Regional Research Station, a farm pond of 30 ft x 10 ft x 3 ft constructed in the dry land, Vagampatti village in Banneli Panchayat was inspected by the study



Photo 6) Farm Pond made in Mr. Raja's farm land

team accompanied by Mr. Vadivelu, Agronomist of Regional Research Station, Paiyur, Krishnagiri Taluk. We could meet a farmer, Mr. Raja Mahalingam, whose farming land is upside of the farm pond. Because he will not get any benefit to his land from the farm pond, he was not interested in the pond.

Then Mr. Raja Mahalingam showed us another farm pond of 30ft x 30 ft x 3 ft where in the same farmer has 4 acres of land. He has a well near the pond and expects that the pond would help to recharge

the well from which he irrigating his land. This farm pond was made by Panchayat by using machine. He wants another pond but has no details in the size or location.

Field Visit-8 (13 November 2014)

After leaving the site of Mr. Raja Mahalingam the team visited a village called Jagatab in Kaveripattinam block which is located on the road side having around 600-700 households. All villagers' main occupation is cultivation. The village surrounded by paddy field and mango orchards. Due to continuous drizzling for last 2 days the roads are muddy.

The team met a group of 5-6 villagers and one of them is Mr. Sabareshwhom the team interacted. He has 3 acres of land with one bore well and one open well. Out of 3 acres he planted

coconut in 1 acre and cultivating paddy in other 2 acres. He is cultivating the land throughout the year. Last year he cultivated sugarcane, paddy and banana. Sometimes the land is kept idle during March and April. The village gets drinking water from Kalavarapalli Reservoir project which was constructed to supply drinking water in this area.



Photo 6) Interaction with Mr. Sabaresh and other residents of Jagatab village

Although irrigated farming is major in this village nowadays, the villagers used to cultivate in both wet land (irrigated land) and dry land. The crops such as horse gram, ground nut and mango in dry land and paddy, sugar cane, brinjal (eggplant), coconut, banana

in wet land were cultivated separately.

In 2009 under Krishnagiri Reservoir project canal was made up to this village which locates at the tail end. That means the water availability in canal was not sure. Only when the excess water would be measured in the reservoir, the authorities release water to canal.

About 2-4 months in a year the water flows in canal. But the water colour is green which indicates the pollution. As per the villagers' information, the sewage water of Bengaluru city is entering into the reservoir, hence water in canal is totally polluted.



Photo 7) the polluted water in the canal

Villagers have no other option than to cultivate paddy due to continuous seepage from canal. Otherwise they could cultivate vegetables especially tomato, lady's finger, brinjal (eggplant). There is no profit in paddy cultivation except for straw used as fodder for his 3 cows. Mr. Sabaresh has a tractor and also gives it for hire. He uses cattle for bund making work. He gets the plough cattle on rent at Rs.500 per hour for 5 hours.

4. Findings:

The following points are our findings regarding the situation of natural resource management and agriculture in Krishnagiri Taluk of Krishnagiri district;

1. Eight Government schemes related to forest, soil and water conservation and agriculture are being executed by different departments and all farmers whom the team met are availing the Government support to get benefit either one or two schemes.
2. Farmers are trying to avail ground water even from more than 1,000 feet depth.

3. The sustenance crops are gradually decreasing except paddy and finger millet. Earlier they used to cultivate minor millets in the area.
4. Farmers tend to shift to commercial crops such as flowers and fruits due to lack of irrigation facilities, promotion of avoiding labour intensive farming and easy access to big markets in Bengaluru and other cities.
5. The Krishnagiri taluk is popular for mangoes, flowers, vegetables especially tomatoes.
6. The villagers do not know the schemes executed in the village especially about purpose, planning, cost and the value of the work.
7. Farmers have availed structures under several schemes from different departments but they do not know the function of such structures and no plan for maintenance. The local farmers were/are not involved in the construction of such structures.
8. The horticulture schemes are aimed to promote high tech agriculture such as gerbera and rose cultivation in polyethylenegreenhouse and shade nets. The promoted agriculture style requires huge investments and consumption of more chemicals.
9. Forest department aimed to promote plantation in public and private premises and in waste lands. The combination of varieties is not appropriate. Fodder varieties are not promoted much.
10. One farmer likes to continue organic farming which experience he gained from practice for about 2 decades.
11. The outcomes of agricultural research found by the Regional Research Station in Paiyur are influencing to the Government policies to promote new technique on cultivation and helping the community.
12. Agriculture department is trying to promote mechanization in agricultural activities and farmers are using tractors, harvest, threshing machines. Contrary the population of plough cattle is decreasing.
13. Some villages where water canal is extended from Krishnagiri Reservoir are facing seepage problem and the villagers are forced to convert the dry land to wet land to cultivate paddy or sugarcane instead of vegetables and millets. Also the villages at the tail end of the canal are facing the problem of polluted water which causes damage to their fields.

4. Suggestions:

- Stepping up the productivity of dry land farming is the need of the hour and considerable investments are to be made to achieve this goal.
- Soil and water conservation measures are to be carried in an extensive and systematic way for conservation of natural resources particularly in dry tracts.
- Agro-forestry should be given a thrust and integrated with dry land farming. Trees will act as insurance if rains fail and cropping suffers.

- A scheme exclusively for the uplift of the tribal population is the need of the hour. The district has considerable tribal population.
- Extension activities and awareness campaigns on improved dry land farming practices need an impetus.
- Involvement of farmers from the stage of planning of activities is required to maintain good condition and full function of the structure.
- Farmers need to be trained to know the mechanism of watershed to conserve soil and water by themselves and to continue agriculture activities.

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