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## Innovative Initiatives for Farmers Development and Issues of Crop Diversification

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### Abstract

The paper was presented at the Expert Group Seminar on “Crop Insurance Policy for Madhya Pradesh” (16-17 May 2015) held at Dr. B. R. Ambedkar University of Social Sciences, *Mhow*, Madhya Pradesh. The article is the revised version of the paper. In this paper for the benefit of farmers some issues have been covered. An analysis has been made how agricultural marketing has been carried out by the self-help group members in Telangana so that farmers get their due price and marginal and small farmers’ group as studied by the author in Karnataka has been presented here. A case of creation of water –bodies on individual agricultural land of marginal and small farmers’ land from Bankura district of West Bengal under MGNREGS which changed economic life of many farmers is presented here. In addition, the author by observing crop like ‘teff’ in Eritrea, and vegetables like avocado, artichoke and asparagus grown in Peru has suggested that, attempt may be made to grow such vegetables and crop, in our country as these vegetables are having high price in international market and teff is good for health and also can sustain in semi-arid area.

**Key words:** Farmers, *Hapa*, SHG, *Teff* and Vegetables.

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## Introduction:

Mahatma *Gandhiji* once said, “India lives in her villages”. Still today it holds good as Indian culture, food, society, etc., can be observed only in rural India. But among these, most important is that the occupation of the villagers as the villagers in India is earning their livelihood mainly through agriculture and allied activities. According to 2011 Census, of the total population of India 121 crore, 83.3 crore live in rural areas while 37.7 crore people reside in urban areas which in relative term can be said 70 per cent of the country’s population lives in rural areas. The state wise data reveal that Uttar Pradesh is much ahead while maximum number of people living in rural areas is considered - 15.5 crore. Against the backdrop, Mumbai tops the list as five crore people live in urban areas. Agriculture provides employment to 56 per cent of the Indian workforce where as its contribution to the gross Domestic Product is around 15 percent. Again, looking at the land holding data it is observed that as per 2010-11 of the total holdings of 137757 numbers, marginal holding constituted 92356 numbers (67%), smallholding-24705 (18%), Semi-medium-13840 (10%), medium -5856 (4%) and large holding-1000 (1%). The statistics further

divulge that marginal holdings had increased substantially over a period of time *i.e.* from 64.8 percent (83694 nos.) in 2000-01 to 92356 numbers (67%) in 2010-11. Against the backdrop, in case of all other holdings, the same has declined (NIRD&PR, 2015). The farmers’ problems in India mainly lie with marginal and small farmers. In this regard one important news item from the Times of India (18 April 2014) may be referred which is mainly findings of a research study carried out by the British researchers.

“British researchers have said they have found few of the main reasons behind India’s farmer suicides. Investigations by researchers from the Cambridge University’s Department of Sociology and University College London’s Department of Political Science has found that rates of suicide are highest in areas with the most debt-ridden farmers who are clinging to tiny smallholdings - less than one hectare - and are trying to grow cash crops such as cotton and coffee that are highly susceptible to global price fluctuations. Farmers at highest risk have three characteristics: those that grow cash crops such as coffee and cotton; those with ‘marginal’ farms of less than one hectare; and those with debts of Rs 300 or more. States in which these characteristics

are most prevalent had the highest suicide rates. These characteristics accounted for almost 75% of the variability in state-level suicides”.

The news item has further quoted one Sri Kennedy, a researcher, "Small scale farmers who cultivate capital-intensive cash crops - which are subject to massive price fluctuations - are particularly vulnerable to accruing debts they can't repay. Many male farmers - who are traditionally responsible for a household's economic well-being - resort to suicide because they can't support their families”. According to the researchers, “In Gujarat, where cash crops are mainly cultivated on large-scale farms have low suicide rates”.

This review discussion has shown the path that small holders experimenting with capital intensive cash crops have been suffering and finally many of them committed suicide. So to prevent suicide, I feel ‘prevention is better than cure’ which in details are discussed here.

In the Twelve Plan Document issues related to agriculture has been explicitly analyzed. By quoting from the plan document it may be stated that “The average farm sector growth in the Eleventh Plan period may be a little over 3.0 per cent. This is a

marked improvement from the average growth of about 2.0 per cent during the Tenth Plan period. .... Since agriculture is a State subject, the Centre will have to work hand in hand with the States to bring coherence in policies and strategies. Seeds and irrigation are the priority areas, which can be catalysts for raising productivity on the supply side. On the demand side, there is urgent need to remove most of the controls that have denied a unified and seamless all India market for most *agri*-products (12<sup>th</sup> Plan document).

Another important point to be noted is that for development of agriculture judicious use of water is *sine qua non*. “Agriculture accounts for 80.0 per cent of water needs at present, and there is considerable scope for increasing efficiency of water use in this area. This requires better management of water in areas of large and medium irrigation projects. It also requires putting in place more holistic aquifer management strategies” (*ibid*).

### **Price Support to Farmers: Innovative Initiative:**

For the minimum price support of the farmers, an innovative model developed in the undivided Andhra Pradesh is presented here as well as crop diversification is also

suggested from the two countries, in addition a case of development of water conservation measure from West Bengal. The based on feasibility as well as local situation, the Government of Madhya Pradesh may implement in the nook and corner of the villages of the State at least in distress districts like *Annupur, Ashoknagar, Balaghat, Betul* etc. It may be mentioned that according to the Report of the Expert Group on Agricultural Indebtedness (Banking division, Dept. of Economic Affairs, Ministry of Finance, Govt. Of India, July 2007), out of 100 agriculturally less developed and distressed districts in India, in Madhya Pradesh there are 18 districts.

As the State is having the Madhya Pradesh State Co-operative Marketing Federation, popularly known as MP *Markfed* which is an APEX body of Marketing Co-operative Societies established in 1956, a registered body under the Madhya Pradesh State Cooperative Societies Act, 1960 so it can play a lead role for minimum price support to the farmers. MP *Markfed* was setup with the objective of purchase, sale and distribution of agriculture related commodities like fertilizer, seed, pesticide, agriculture machineries and procurement of food grains under minimum support price

schemes from primary agriculture credit co-operative societies, marketing co-operative societies and farmers in the *NeGP-Agriculture Mission Mode Project Software Requirement Specifications Madhya Pradesh State Agricultural Portal remote areas (NeGP, 12)*. *Markfed* has a vast marketing network comprising of 7 zonal offices, 41 district offices and 426 distribution centres at 244 different locations and supported by 280 Marketing Societies and 4526 Primary Agricultural Credit Co-operative Societies.

In view of this it is suggested that MP *Markfed* should come forward and through self-help groups (SHGs) minimum price support to farmers as observed in Telangana may be initiated.

### **Case from Telangana:**

To provide farmers with minimum price support for their produce, Andhra Pradesh Government (undivided, now a part is Telangana) under its organization viz., Society for Elimination of Rural Poverty (SERP) initiated innovative steps through self-help groups (SHGs) from 2000. Even after creation of Telangana, SERP has been created separately both for Andhra Pradesh and Telangana. However, SERP worked on a comprehensive multi-dimensional poverty

alleviation strategy by focusing equally on the ‘Livelihoods Value Chain and Human Development Indicators’. Keeping this in mind, SERP of undivided Andhra Pradesh worked on a unique structure of community based organization by organizing 11.4 million rural women into 1.27 million SHGs, 38646 Village Organizations, 1098 *Mandal Samakhyas* (*Mandal* Federation i.e. cluster of villages) and 22 *Zilla Samakhyas* (*District* Federation (*serp.ap.gov.in*)).

Regarding price support to the farmers, the procurement and marketing of the agricultural goods were meticulously planned by establishing procurement centers through Village Organizations (VOs, federation of SHGs at village level) under the umbrella of SERP so that marginal and small farmers get remunerative prices. It is pertinent to mention that maize and paddy were the two major crops which farmers used to sell as observed in the field by the author. Initially in 2004-05, procurement at village level was started with maize and observing its success, Andhra Pradesh Civil Supplies Corporation was entrusted the responsibility of procurement of paddy from 2005-06 through Village Organization. And every

year specific dates (average 45 days duration each in Kharif and Rabi) were notified and willing farmers can sell their goods through SHGs which is very transparent. The major objectives of marketing support through SHGs inter alia, were:

- To enable the small & marginal farmers to obtain the best price for their Agricultural Commodities and forest produce.
- To minimize the cost of inputs to the rural poor farmers.
- To create Marketing facility at their door steps.

Initially marketing efforts were initiated with the procurement of *Neem* fruit in one *Mandal* and red-gram *dalin* five *Mandals* in 2001 of *Mahabubnagar* district, (then Andhra Pradesh now Telangana) subsequently the process was spread over to 21 districts of undivided Andhra Pradesh involving 50 items purchased through Village Organizations (VOs). And later on maize and paddy were included. To get an idea about the benefits reached to the farmers following table may be seen at a glance.

**Table: 1 Minimum Price Support to the Framers**

Sl. No	Year	Dist	Man dals	VO's	Qty in Tons	Value in Crores	Beneficiaries	Benefit to Farmers in Crores	Commision to VO's in Crores
1	2001-02	2	5	29	1001	1.67	5750	0.08	--
2	2002-03	5	48	72	3388	3.17	76597	0.25	--
3	2003-04	7	181	602	4771	5.82	55253	0.36	--
4	2004-05	20	502	1154	23287	15.51	108394	1.75	--
5	2005-06	19	710	2010	236705	137.31	164502	17.75	1.18
6	2006-07	22	533	783	220582	136.16	165661	16.54	1.22
7	2007-08	21	1042	2065	477907	323.32	232151	35.84	3.81
8	2008-09	21	872	1704	592998	492.16	282930	44.47	21
9	2009-10	22	842	1449	658238	613.72	284718	49.46	22
10	2010-11	21	771	1253	401043	411.50	124508	30.07	20.00

**Source: SERP, Andhra Pradesh (undivided)**

Although table is self-explanatory but few important points as observed from the table are:

- Out of the 22 districts (undivided Andhra Pradesh), 21 districts were covered under the scheme and similarly out of 1098 mandals, 771 were covered. The variations in the number of mandals are observed because in sometimes there was no necessity of price support through SHGs. The farmers could sell their goods in the open market.
- Since inception of the scheme, crores of goods were transacted.
- The beneficiaries were in lakh indicating lakhs of families were benefitted.

- Not only farmers were benefitted even VO also earned as commission.

**Case:** This study was carried out in last week of December 2012 at *Eklaspur* village, *Manthanimandal*, *Karimnagar* district of then Andhra Pradesh now Telangana. In *Eklaspur* village, the marketing Centre was meant for procurement of paddy as in the village and nearby areas mainly paddy is cultivated. During the time of visit, *Meghna* Village Organization (as there were two VOs and each year one VO is given the task) was assigned the task. As a part of marketing system the farmers had to bring paddy at their own cost at the Centre, in addition they have to pay at the rate of Rs. 20 per quintal, if the labourers upload/download paddy who are normally

available at the site. Before coming to the Centre, each farmer was given a token mentioning the date for selling the paddy in order to avoid chaos. The *Eklaspur* village Centre started its operation from 7 November 2012 and closed on 4 January 2013, except Sundays all the days were open for operation. For smooth functioning of the activities like other cases, 5-member committee from the members of VO was formed to oversee marketing process and each was assigned a specific task and in addition 2 more members - 1 as book-keeper and 1 Community Resource Person (CRP) - were also involved and thus 7 persons were involved in the process here. Except one male Community Resource Person (CRP), all were women indicating activities were carried out by the women. The job of CRP was to verify the paddy bags with their numbers while uploading to the trucks meant for rice mill vis-a-vis monitoring the movement of trucks till it reaches to the rice-mill. The functioning of the 5 members was - first member checked quality of paddy, confirmation of farmers' name etc. Second member was maintaining records of gunny bags etc. Third member was supervising weight of paddy and its proper bagging etc. Fourth member was in-charge of loading in

the trucks, transportation, truck-sheet maintenance, etc. Fifth member's important assignment was issuing cheques to the farmers. Generally postdated cheques were given to the farmers for 4-5 days duration. It is pertinent to mention that two grades of paddy were procured - Grade-A variety, price of which was Rs. 1280 per quintal and another was Grade-B variety, price was Rs 1250 for one quintal. For carrying out the activities, each one was paid at the rate of Rs. 200 per day and rough calculation shows each was earning minimum of Rs. 10000 in one season which was their additional income. Moreover some local labourers also were involved in the process and they were earning good amount for loading/uploading. After closing of the Centre on 4 January 2013, data were collected from DRDA and observed that altogether 555 farmers sold their paddy in the Centre and total quantity of paddy sold was 28542 quintals (Grade-A was 3179 quintals & Grade-B was 25363 quintals). In monetary term, total value was Rs. 3,57,72870 - for Grade-A the amount was Rs. 40,69120 and for Grade-B, the value was Rs. 3,170,3750. Total commission generated by the VO was to the tune of Rs. 894322. Total expenditure incurred by the VO was to the tune of Rs. 2.20 lakh and thus

the VO could earn a net profit of Rs. 7,74,322 (Chatterjee, 2014).

### **Case from Karnataka: Initiative by NGO:**

#### **Issues related to Marginal & Small**

**farmers:** Sufferings of Indian farmers can be attributed to many factors *interalia*, of which are non-availability of timely loan, marketing of products etc. According to the All India Debt and Investment Survey (AIDIS), the share of total debt of cultivator-households taken from formal sources fell from 64 per cent in 1992 to 57 per cent in 2003. In the same period, the share of total debt taken from money lenders almost doubled from 10.5 per cent to 19.6 per cent, (Agriculture Today 2012). By quoting from the Agriculture Today journal 2012 (March issue), it may be stated that “Money lenders continue to be the base of Indian agriculture”.

In this paper, measures taken by an NGO *viz.* Shri *KshethraDharmasthala* Rural Development Project (SKDRDP) to improve

economic condition of marginal and small farmers is presented. This study was carried out by the author in 2010 directly contacting the NGO and the farmers. The NGO, SKDRDP in Karnataka by forming 5-8 small/ marginal farmers in a self-help group has proved that their economic condition can be improved to a great extent. The experiment was started in 1991 with the change of concept from charity to self-help. The marginal and small farmers (5 to 8 farmers) by forming self-help group under the banner of ‘*Pragathibandhu*’ (meaning farmers’ friend) by SKDRDP work together for their agricultural development. Based on sustainability of the groups, the SKDRDP extends loan to them with easy rate of interest. In addition, farmers can borrow from bank also, if they desire. Important point under ‘*Pragathibandhu*’ is free sharing of labour which means each member in a group has to work in others land one day in a week at free of cost and thus in rotation agricultural land of all the members are cultivated.

**Table: 2: Progress of PBG since inception to 2013-14(Rs. in Crore)**

Sl. NO	Items	2013-14	Since Inception to 2013-14
1.	Groups formed	758	51,784
2.	families involved	12,162	2,70,909
3.	Savings mobilized	3.39	122.25
4.	Loan disbursed to members		
	Numbers	11,941	8,16,128
	Amount (Rs.)	53.45	1,115.81
5.	Amount recovered	43.55	776.63
6.	Labour sharing		
	No. of Man days	1088200	48913477
	value @RS.150/- per day (Rs. in Crore)	16.32	733.70

**Source:** SKDRDP Report

Although the table is self-explanatory, but regarding value of labour sharing, it may be mentioned that an amount of Rs 733.70 crore of money could be saved by the marginal & small farmers by sharing the free labour under *Pragathibandhu*. Labour sharing not only helped small and marginal farmers to save some amount but it facilitated to develop fraternity among the group members. The field study by the author divulged that marginal and small farmers were earlier surviving on hand to mouth by growing only paddy and vegetables and after forming SHG, their quality of life has been changed and almost all of them had TV, refrigerator, *gobar* gas plant, solar light etc. Regarding growing of crops it was observed that in addition to cultivating paddy and vegetables, other crops like areca nut and coconut, black pepper, jasmine flower etc., were also grown. To get an idea about the *Pragathibandhu*, a case as tabular form is presented below:

**Village: Parni, Laila Village, Taluk:Belthangady,Uttara Kannada**

Name of the <i>Pragathibandhu</i> SHG	:	Parni			
Age of the SHG	:	16 years			
Savings of the members	:	Rs. 87,467.00			
Total Labour Sharing days	:	6020			
Sl. No.	Name of the member	Land owned (Acres)	Crops grown	Loan availed (Rs.)	Purpose of the loan
1.	<i>Harishchandra Hegde</i>	2	Areca nut, Coconut,	88,935.00	Agri development, life insurance, Children's

			Paddy		marriage
2.	<i>Mexim D'souza</i>	3	Areca nut, Coconut, Paddy	76,645.00	Agri development, well repair, Children's marriage
3.	<i>Ronald D'souza</i>	3.50	Areca nut, Coconut, Paddy	48,530.00	Agri development, life insurance, well repair
4.	<i>Peter D'souza</i>	3	Areca nut, Coconut, Paddy	50,000.00	House construction, Areca nut cultivation, life insurance, education
5.	<i>Kesahava Shetty</i>	1	Areca nut, paddy	1,10,075.00	Agri development, House construction, life insurance
6.	<i>Gangayya Shetty</i>	0.50	Areca nut, Coconut, Paddy	69,040.00	Well repair, house repair, latrine construction

**Source: Field Study in 2010**

A few important points as observed from the table are:

- a) Persons belonging to different religious groups were involved and all worked together as brotherhood feeling.
- b) Because of NGO's intervention, farmers could borrow substantial amount phase by phase.
- c) Loans were used for various purposes like well repair, house repair, latrine construction, education etc.

**Scope of developing water tank (Hapa) under MGNREGS: Case from West Bengal:**

Sometimes in a dry area a single input can transform life of marginal farmers and this case is from a poor and backward district of West Bengal namely *Bankura*. The district is spread over to an area of 6,882 square kilometers with a total population of around 36 lakh as per 2011 census. The district is drought prone and due to undulating, lateritic, & porous soil moisture content at subsoil level is low. Due to low irrigation facility cropping intensity on average was 147 percent. Average size of land holding was 1.02 acre and 67 percent of the holding was around 0.53 acre. In view of this, district officials decided and designed under the guidance of an NGO viz., 'Pradan' construction of *hapa* (watertank

with average size of - 60x40x12 feet) on individual land belonging to below Poverty Line families (BPL) of marginal and small farmers. These were constructed under Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) through Gram Panchayat and *hapas* are mainly meant for water conservation approach as well as provide gainful employment MGNREGS workers. It is pertinent to mention that the length, width and depth of one *hapa* are 60 feet, 40 feet and 10-12 feet respectively and an amount of Rs 48,000 to Rs. 55,000 is required ( as per 2014-15 prices) where around 400 person-days of employment can be created.

The author visited the district as a part of NIRD&PR's 'Village Adoption Study' in three phases – 2012, 2013 and 2015 and observed, after constructing of *hapas* economic condition of the farmers has been improved. As an example case from one GP, is presented here. At *Biradih* village of *Hirbandh* block, *Bankura* district the data provided by MGNREGS Cell of West Bengal, Government reveal that for 35 households, mostly belonging to marginal farmers as well as marginalized community, were provided with one *hapa* each benefitting land area of 30 acres by

doing irrigation. The marginal farmers' income on an average in each season went up to Rs. 25000 as plenty of vegetables like tomato, brinjal etc., are cultivated in addition to paddy. Further, water harvesting structure also has facilitated to cultivate fish. To get an idea one *AkulBawri* (SC) having slight less than 2 hectares of land was contacted. He informed that before provided with the *hapa* in 2009-10, maintenance of his family was an issue as sequel he had to migrate to nearby districts for about 3 months. After getting *hapa*, his income not only scaled up but all the three children were extended good education as they were admitted in a hostel. He no longer was migrating in other districts for livelihood. With net yearly of around Rs. 80,000 he almost regularly consumed fish as fish and rice are favourite diet of the Bengalis.

### **Peru:**

This case is from a South American country namely Peru where uncommon crops like artichoke, asparagus, avocado etc., were grown and author while visited in May, 2013 observed marginal and small farmers earning substantial amount by cultivating these crops. Such crops on experiment basis may be taken up in the State for the benefit of small and marginal farmers.

Peru is a country with 29 million people spread over to an area of 1,285,216 square kilometers is situated on the Pacific coast of South America. While coffee remains Peru's most important agricultural export crop, however, more than 60 percent of all agricultural exports are fruits and vegetables in recent years of which asparagus is the largest fruit and

vegetable exported from Peru. According to the statistics, Peru's fruit and vegetable exports were close to U.S. \$1.2 billion in 2009, which scaled up from \$60 million in 1990. Since 1990, exports have increased at an average annual rate of 16 percent. In the following table, some selected items which are exported in different countries are presented for the interest of readers.

**Table 3: Selected fruit and vegetables exported in 2009**

Goods	Value (US \$ million)	United States (%)	EU (%)	North east Asia (%)	Rest of the world (%)
Asparagus (Vegetable)	373.9	50.2	44.1	1.3	4.4
Artichoke (Vegetable)	72.3	59.7	36.8	0.0	3.5
Avocado (fruit)	64.1	0.2	95.2	0.0	4.6

EU = European Union, **Source:** Global Trade Information Services, Inc. (2010)

It is suggested here that Government of Madhya Pradesh may initiate to grow such crops if feasible, in the state.

### **Eritrea and crop 'teff':**

With the increase in population in India demand for food grains has been increasing. On the other hand, because of less rainfall, inelastic supply of agricultural land etc. need of the hour is to experiment to cultivate new crops which require less rain and nutritious also. In this article, based on author's experience cultivation of *teff* of which *injera* (looks like our Indian *dosa* but big in size) is prepared is discussed. This food is consumed by the people of Eritrea

(even in Ethiopia) as staple food. The author stayed two years in Eritrea during late 2000 and studied importance of this crop *inter alia*, with his teaching job. Eritrea is located in northeastern Africa and it has a land area of 125,000 square kilometers and an estimated population was 42 lakh.

The crop *teff* is uncommon to Indians *albeit*, it is the staple food of the people of Eritrea. Recently farmers in Australia and the United States started to experiment with growing of *teff* as it is having high nutritional value.

From *teff*, the dish which is cooked is known as *injera* and most of the time mixed with barley or wheat *injera* is prepared. *Injera* can be compared with a big size of our *dosa* prepared in India and it is commonly eaten with sauce, vegetables, meat etc. One *injera* is shared with 3-4 family members. *Teff* is a

### **Conclusion and suggestions:**

Agriculture sustains the lives of millions in the world in terms of nutrition and income, but changing rainfall patterns and poor storage can severely cut productivity. Simple innovation can help farmers grow healthier crops and store their produce for longer. But for an invention to work, it has to be affordable and integrate smoothly into farmers' existing workflow.

To address the issues pertaining to the farmers' in general and marginal and small farmers in particular State Government in collaboration with Central Government should work hand in hand. Even NGOs and CBOs should take initiative to help farmers whether technically, scientifically or extending knowledge or financially. We have to remember the farmers are our '*annadata*' (providers of food) so they must be taken care of by the society. Any case of suicide of the farmers because of crop failure or lack of minimum price support is a shocking

great source of protein and it is gluten free. I suggest Government of Madhya Pradesh should try to introduce the crop wherever feasible. It is pertinent to mention that in Madhya Pradesh only traditional crops are grown such as paddy, wheat, *jowar*, gram, soybean, sugarcane and cotton. incident for all the Indians. I suggest prevention is better than cure. So to prevent farmers for experimenting with new crops for earning more money at the initial stage should not be encouraged. And the following suggestions are made in this paper.

- a) MP *Markfed* should come forward and through self-help groups (SHGs) minimum price support to the farmers, as observed in undivided Andhra Pradesh, may be initiated as the system is transparent.
- b) For the benefit of marginal and small farmers, experiment basis growing of cash crop is not suggested particularly coffee and cotton. If at all they are interested then in addition to cultivate food crops as observed in *Pragathibandhu* SHG, in a small part of their land experiment basis cash crop may be cultivated.

- c) New type of crops like ‘teff’ as observed in Eritrea (as it also a food-crop which can be grown with minimum water) may be grown in Madhya Pradesh, if feasible.
- d) Other crops which are having high international value like artichoke, asparagus, avocado etc., may be taken up in the State at least on experiment basis these in addition to fetching foreign currency can be consumed.
- e) The *Pragathi Bandhu* (PBG) model has proved that marginal and small

farmers can earn substantially and also it helped to build national integration as well as brotherhood feeling. The concept, *PBGs* have been working successfully for about two decades indicating its sustainability of the groups. Earlier it started in one district of Karnataka subsequently spread over to other districts.

- f) For benefit of marginal and small farmers scope of developing *hapa* may be worked out as it was highly beneficial to them.

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