STAKEHOLDER ANALYSIS REPORT MAGADI

(Revised 12-12-07 draft ver 3.1)

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Criteria used for stakeholder analysis: RUAF-CFF stakeholder analysis Guidelines

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1.0 Back ground:

In **2005** the RUAF – ***Cities Farming for the Future*** **(RUAF-CFF)** ***Project*** was initiated to stimulate the participatory and multi-stakeholder formulation and implementation of local policies and action plans on urban and peri-urban agriculture that will support farmers' livelihoods while safeguarding municipal concerns related to health and other issues. The RUAF-CFF Project will directly contribute to achieving MDGs (1 & 7)

The **main objective**s of RUAF-CFF programme are to contribute to

- urban poverty reduction
- urban food security
- improved urban environmental management
- gender and social equity
- empowerment of urban and peri-urban farmers and
- participatory city governance.

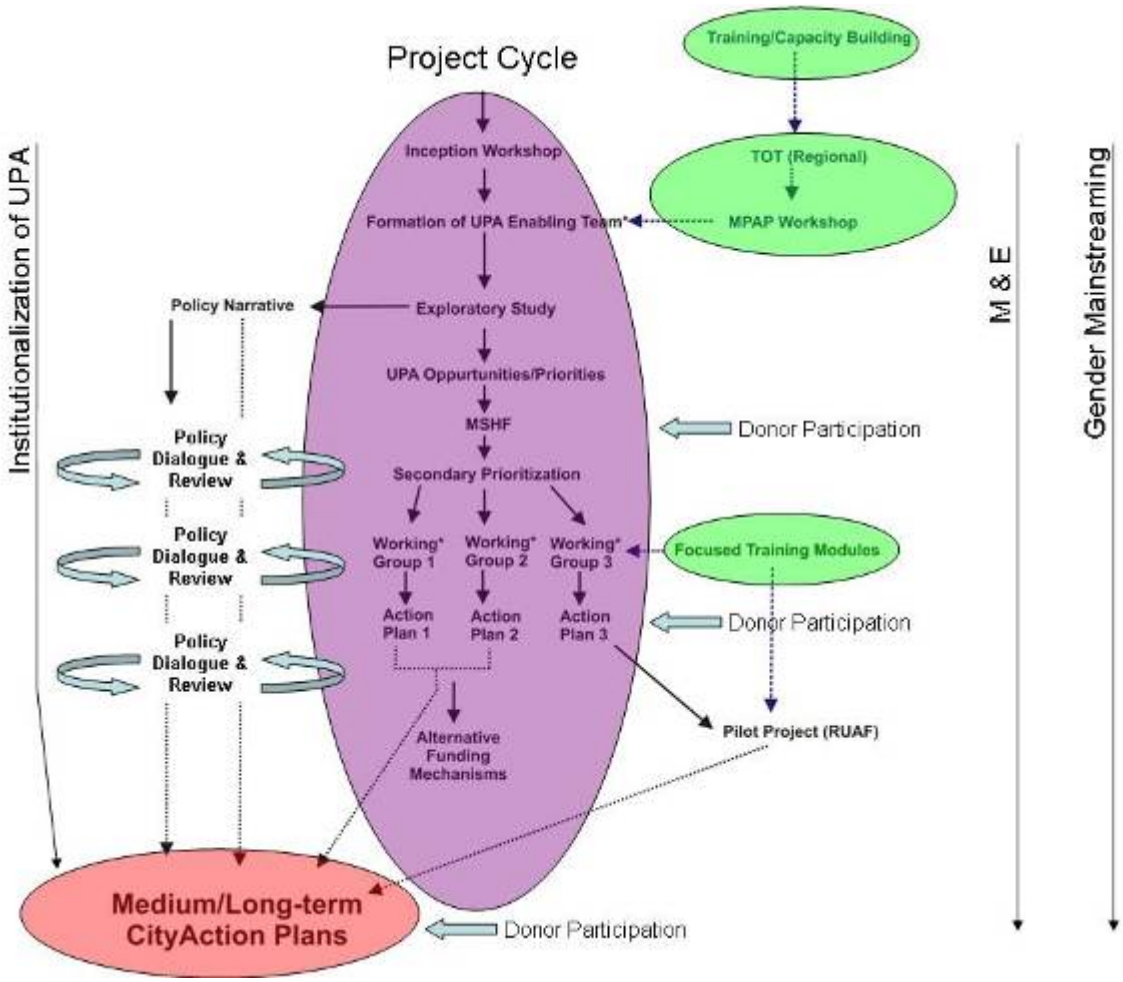
Multi-stakeholder processes are increasingly considered an essential element of policy design, development and implementation. It is considered to be critical that people and organizations from a diversity of backgrounds work together in order to achieve sustainable and equitable solutions to the current challenges associated with urban development and the realization of a 'Sustainable City'.

Therefore, a fundamental component of the RUAF-CFF programme is to establish a ***Multi-stakeholder Process for Action planning and Policy Design (MPAP)*** that will *create an equitable and mutually acceptable policy environment for UPA*.

In each pilot city in the South Asia, namely, Hyderabad and Bangalore in India and Gampaha in Sri Lanka (Figure 1), it is envisaged that the MPAP process will involve the following activities

- Inception Workshop
- The establishment of a local city based UPA enabling Team
- An exploratory study: Stakeholder analysis, training and information needs assessment, UPA related situation analysis and policy analysis
- Strengthen existing capacity through a MPAP/UPA Capacity Building workshop and sub-sequent stakeholder specific training initiatives
- Presentation of the findings of the exploratory study to a Multi-Stakeholder Forum and at a Policy Awareness Seminar
- Development of a series of road maps/action plans that will address key constraints/opportunities to sustainable and economically viable UPA
- Initiation of a co-funded Pilot Project in each pilot city as identified during the action planning process
- Work towards the formation of gender equitable policies that will facilitate the inclusion of UPA in long-term Municipal Planning

Figure 1. Multi-stakeholder Action Planning Process adopted by the RUAF-CFF Project:



N.B. M & E = Monitoring and Evaluation

1.1 What is Urban and Peri-Urban Agriculture (UPA)?

Conventionally, agriculture is defined as the process of producing food, feed, fiber and other desired products by the cultivation of certain plants and the raising of domesticated animals. The definition of UPA varies on a project basis and as dictated by institutional mandates, policy opportunities and restrictions and, on individual perceptions.

FAO-COAG (1999) states that: *"Urban and Peri-Urban Agriculture are agriculture practices within and around cities which compete for resources (land, water, energy, labour) that could also serve other purposes to satisfy the requirements of the urban population*".

Mougeot, 2000 defines urban agriculture as *the growing of plants and the raising of animals for food and other uses within urban and peri-urban areas, as well as the related production of inputs and the processing and marketing of products*

IDRC (International Development Research Centre) Canada gives the definition of UPA as:
"Urban and Peri-Urban agriculture or UPA is an industry located within or on the fringe of a town, a city or a metropolis, which grows or raises, processes and distributes, diversity of food and non food products, (re) using largely human and material resources, products and services found in and around the urban areas".

The most important characteristic of urban agriculture is not its location, but the fact that it is part of and interacts with the urban ecological and economic system. UPA is embedded in -and interacting with- the urban ecosystem. Such linkages include the use of urban residents as labourers, use of typical urban resources (like organic waste as compost and urban wastewater for irrigation), direct links with urban consumers, direct impacts on urban ecology (positive and negative), being part of the urban food system, competing for land with other urban functions, being influenced by urban policies and plans, etc.

1.2 Urban and Peri-Urban Agriculture: A global perspective:

Globally, an estimated *800 million* people are engaged in some form of urban farming, whether tending home gardens or working in commercial livestock, aquaculture, forestry or greenhouse operations (New Agriculturist on line report (www.new-agri.co.uk)). Table 1 summarizes examples of the global contribution extent of UPA.

Table 1. Global scenario of UPA contribution to the cities in terms of livelihoods and income generation and food security

Livelihoods and Income Generation	
City	Examples & Case Studies
Dakar, Senegal	More than 15,000 jobs are generated through UPA activities. There are more than 4000 family vegetable farms and more than 250 poultry units.
Dar Es Salaam, Tanzania	UA forms at least 60% of the informal sector and is the second largest urban employer. 35,000 households depend on fruit and vegetable production for income.
Kampala, Uganda	Approximately 30% of the households are engaged in UPA, 75% of which are female headed households
Governador Valadares Brazil	45% of the population practices a form of UPA. It amounts to 1.17 % of the GDP
Rosario, Argentina	More than 10,000 families are involved in Urban Farming. More than 3,500 families are involved in marketing, obtaining a monthly income ranging from 40 USD to 150 USD
Cagayan De Oro , Philippines	About 40% households are engaged in some form of UPA. 96% of the elementary schools practice UPA. Cagayan De Oro has an allotment garden program, which enables multiple functional land use such as food security, income generation, nutrient recycling of biodegradable household wastes as well as being used as a place for community and family affairs.
Shanghai, China	2.7 million farmers are practicing UPA. The income from UPA contributes to 2 % of the GDP.

Food Security	
City	Examples & Case Studies
Havana, Cuba	In the early 1990s, faced with food shortages and widespread hunger, city dwellers began growing food on rooftops, in schoolyards and in front of office buildings. More than 1.0 million tons of food is now produced within the city limits. Cuba has become a world-class laboratory for organic farming.
Accra, Ghana	90% of the perishable vegetables are produced within the city limits
Addis Ababa, Ethiopia	79% of milk and 30% of vegetables required by the city are produced within the city.
Dar Es Salaam, Tanzania	90% of leafy vegetables, 60% of the city daily milk supply are produced within the city limits
Harare, Zimbabwe	60% of the city requirement for vegetables, milk and meat are produced within the city.
Hanoi, Vietnam	80% of fresh vegetable, 50% of pork, poultry, and fresh water fish and 40% of eggs of city daily requirements are farmed in the city.
Shanghai, China	60% of cities vegetables, 90% of the city's eggs, 100% of city's milk and 50% of the pork and poultry meat come from within the city.
Socio-Economic Issues	
Mumbai	Development of city farms by street children was launched in Mumbai to improve the socio-economic condition of destitute children through integrated environmental management.
Kolkatta	The fish farming taking place in Calcutta's wetland supplies one fifth of greater Calcutta's fish. The city sewage that feeds the ponds is appropriately treated through methods developed by fishermen over the years.

Stakeholder Analysis an Overview:

1. Name of the Department/ organization	**2. Mandate: Area of operation& target groups**	**3. Strengths: What are the potential roles/ contributions**	**4. Existing linkages/ formal collaborations among the organizations**	**5. Level of collaboration: With the farmers -/agriculture concerns**	**6. Resources available with the organization to contribute to the development of the PUA**	**7. What is a realistic role for the stakeholder in the PUA**	**8. Remarks: Why, where what& How**
Formal Institutions							
Magadi TMC:	Urban waste management and safe disposal	Necessary mandate and resources	There is none established	Scope for collaboration through recycling and composting of urban organic waste for agriculture	Urban waste disposal and management supported by the Govt.	Linking women SHGs established by TMC for recycling and composting of urban organic waste for agriculture.	-Management of solid & liquid waste. -invest in setting up compost processing units/water treatment plant. -Presently no system of recycling urban waste
Department of Agriculture:	• Achieve targeted crop production. • Promote organic farming. • To support the supply of agro inputs/quality control.	Technically trained staff Well-defined Govt schemes.*	There are no formal linkages established at present. However, there is an annual joint review of progress of different Government Departments	Direct linkages in the form of demonstrations and extension.	Resources include funds from Govt schemes.	The department can play a direct role in implementing PUA	The specialized services of the department could be an asset for the PUA
Department of Horticulture:	Implementation of schemes for development of Horticulture including organic farming.	Technically trained human power. Well defined Govt schemes**	There are no formal linkages established at present. However, there is an annual joint review of progress of different Government Departments	Direct linkages in the form of demonstrations and extension.	Resources include funds from Govt schemes.	The department can play a direct role in implementing the PUA	The specialized services of the department could be an asset for the PUA

NB: * ** For details refer to Annex

1. Name of the organization	2. Mandate: Area of operation& target groups	3. Strengths: potential roles/ contributions	4. Existing linkages/ formal collaborations	5. Level of collaboration: With the farmers	6. Resources available with the organization	7. Realistic role for the stakeholder	8. Remarks: Why, where what& How
Department of Animal Husbandry:	To department have a mandate to enhance animal resources by way of extending support services to the farmers.	Technically trained staff and well defined Govt. schemes	There are no formal linkages established at present. However, there is an annual joint review of progress of different Government Departments.	Direct link with farmers through diary cooperatives. Fodder and nutritional enhancement Breeding services etc.	Resources include funds from Govt schemes	The department can play a role in implementing the PUA	The specialized services of the department particularly through recycling of animal waste.
Department of Sericulture:	Promotion of sericulture production.	Technically trained staff for mulberry cultivation & silk production.	There are no formal linkages established at present. However, there is an annual joint review of progress of different Government Departments	Direct linkages in the form of demonstrations, extension and marketing	Resources include funds from Govt schemes	The department can play a role in implementing the PUA	The residues from the silkworm unit are an excellent organic manure.
Department of rural Development:	Development of rural infrastructure through schemes	The department supports and regulates local governance	Linkages with Govt schemes implemented in rural areas through local governance	Collaborations are through different development depts..	Govt. funding for rural infrastructure development	The Dept. can play an indirect role in the programme	The Depts. Focus is primarily on rural development
Watershed Development department:	Development of watersheds through integrated farming practices.	Trained staff in multidisciplinary development activities.	Linkages within the Dept. with various disciplines	Direct linkages with the farmers.	Govt. funding	Direct link with other department s with regards irrigation water supply	The mandate of the dept makes it relevant to be a partner in PUA

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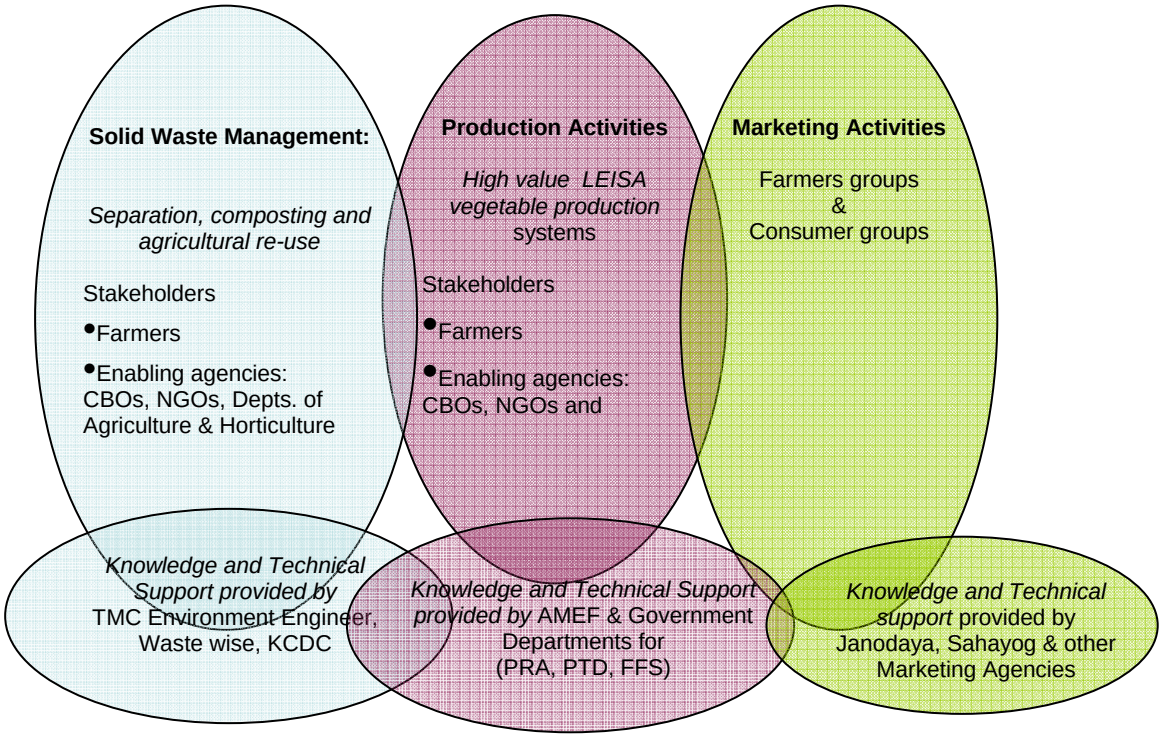
NGOs:							
A. CHIGURU	Liberation of child labour, access to child education, creation of public awareness on child rights and women empowerment.	Community organization skills. Reach of the program in Magadi area is 50 SHGs involving >300 women.	Established linkages with concerned departments. Linkages in the local communities	No specific agriculture focus. Open to possible programs to empower the communities	Funding from government schemes for child programs & donor funding.	Linkages in the villages to form interest groups.	Formally established groups available
B. SADHANA	Community based sustainable development. Work for sociological and ecological concerns	SHGs for income generation activities in the villages	Linkages in local communities and with local governance and PRIs. Training for women in IGA	No specific agriculture focus. Open to possible programs to empower the communities	Funding from government schemes for income generation activities & donor funding	Linkages in the villages to form interest groups.	Formally established groups available
C. DHAN F	Small savings and Micro finance for IGA. Training and capacity building for micro credit mgmt.	Training and capacity building of the village community	No linkages with any development Depts.	Collaboration in the villages for thrift and credit	Funding from own resources generated through thrift and credit schemes.	Funding from government schemes for IGA & donor funding	Utilization of the training capabilities.
D. Lakshmi Narasimha swmy Savayava Krishkara Sangha-Madabala	Promotion of organic farming through trainings.	30 practicing organic farmers in the group.	Linkages with Dept of Horticulture for conducting training under NHM and rainwater harvesting.	Collaboration with farmers practicing in the area & with Hort. dept	Govt. funds for the promotion of NHM trainings	Possibility of developing the group as local facilitators	30 practicing organic farmers in the group as a resource.

Note: IGA = Income Generating Activities

2. Vision for Peri-urban agriculture (PUA) in Bangalore, Karnataka, India

The principal focus of the project is on poverty alleviation through enhancing local food security and ensuring gender and social equity concerns will be given importance at every stage of the project from planning to implementation. The The vision of activities to promote Peri-urban agriculture (PUA) in Magadi, is based on improving the capacity of farmers (through farmer participatory knowledge and technology transfer) to grow high value marketable vegetables using low external inputs following LEISA Principles (Low External Input Sustainable Agriculture) and incorporate compost from bio-degradable municipal waste. It is a well known fact that most of the agriculture/horticulture activities that take place in the peri-urban regions of big cities are basically to meet the urban demands for farm produce; be it vegetables, fruits or value added food grains and pulses. In Bangalore it is no different, since Bangalore the fast growing city can consume any amount of agriculture produce that can reach the city. In this context Magadi, is an ideal peri-urban region/location for the RUAF-CFF Project to create a ***'Bright Spot'*** demonstrating the potentials for PUA and to initiate vital and sustainable linkages between producer and consumer groups.

Effectively, the proposed project activity will focus on linking solid waste management, production and marketing activities as indicated diagrammatically below



AME Foundation in collaboration with the IWMI has been collaborating in the RUAF-CFF Project since June 2006 to encourage and develop agriculture activities both in the urban Bangalore and peri-urban locations. Activities have already been initiated in three urban locations in Bangalore city namely, Bansankari, J.P. Nagar and Jayanagar residential lay outs. Here the focus has been to encourage urban dwellers to take up urban horticulture in available spaces such as back yards and roof tops incorporating, rainwater harvesting, home composting and vegetable production. This is also linked to training of 'Mali's' and employment generation.

However, and critically from a long-term perspective it was strongly felt by the Bangalore 'Enabling Team' that focus should also be placed on strengthening and protecting existing 'peri-urban nodes of agricultural production'. This is in large part to work towards

1. protecting existing peri-urban production systems from urban expansion,
2. promotion of LEISA agriculture principles
3. protecting and enhancing agriculture based livelihoods as a means of alleviating rural/urban migration
4. promoting urban to peri-urban nutrient return flows through composting of bio-degradable urban waste and its agricultural re-use
5. promoting urban food and nutritional security and livelihood security by establishing robust producer/consumer linkages

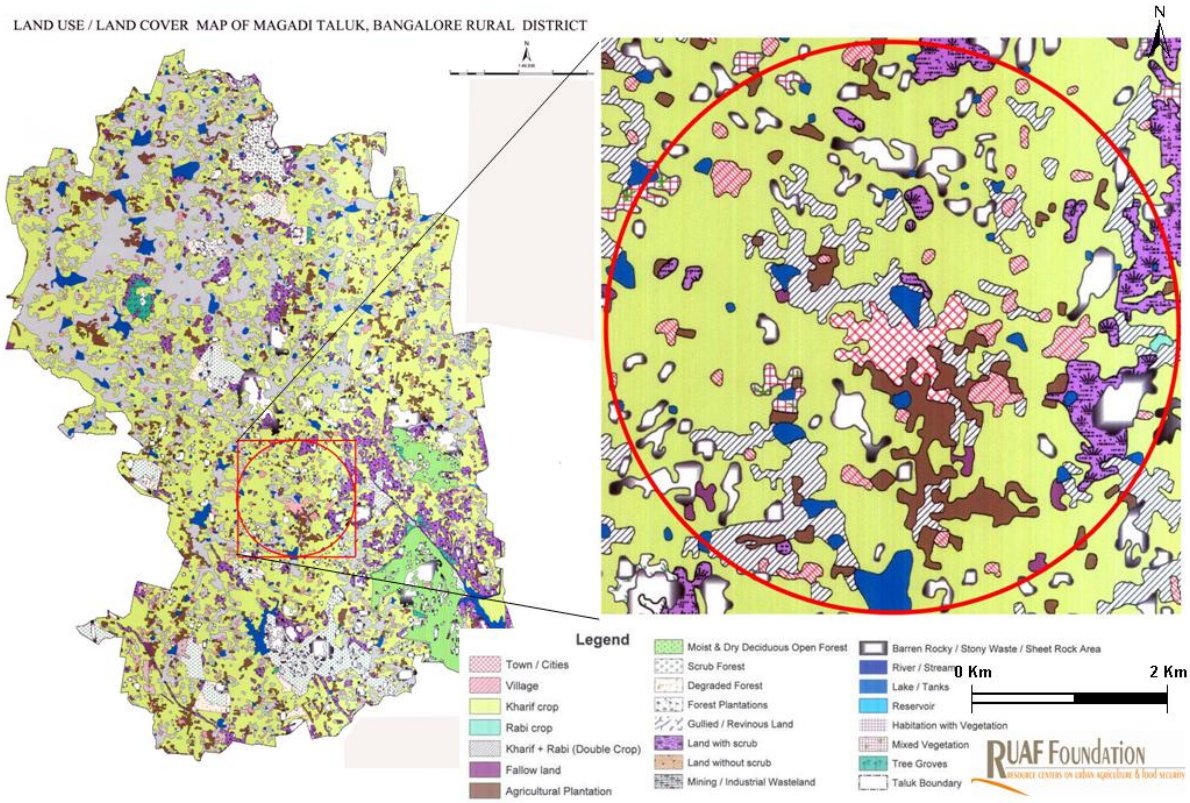
It is envisaged that creating a ***bright spot*** demonstration project will facilitate the wider recognition of the need to preserve and enhance peri-urban production systems particularly in light of increased food costs due to increased fuel/transport costs and the high post harvest losses (>40%) associated with transporting produce from distant vegetable production systems due to a fundamental lack of effective refrigeration and storage facilities.

3. **Stakeholders in the promotion of Periurban Agriculture (PUA) in Magadi Taluk, Karnataka.**

Introduction: Profile of Magadi Taluk:

Magadi is a Taluk headquarters 45 km west of Bangalore and comes under the newly formed Ramanagar District under Greater Bangalore (prior to August 2007 it was part of Bangalore Rural District). Geographically Magadi is situated on the Deccan Plateau and between latitude 12.58 & 12.97 degrees North and longitude 77.23 degrees East. It has an average elevation of 925 m (3034 feet). The Muncipal town of Magadi has a population of over 25,000 and is governed by the Town Muncipal Council (TMC). Magadi is surrounded by agricultural land as indicated in Figure 1.

Figure 1. Landuse classification of Magadi Taluk indicating 3km radius primary study area of project activities.



3.1 Suitability of Magadi for the PUA project:

Establishment of the PUA project in Magadi is appropriate on several counts; especially when considering the general positive atmosphere prevailing in this peri-urban town that is considered congenial for an initiative such as PUA. Above all there has been an overwhelming response for the project from various potential stakeholders in Magadi. In summary, Magadi has been selected due to;

1. Suitable political environment supportive to PUA
2. Leadership consists of interested farmers
3. Availability of un-utilized organic town waste for agricultural re-use
4. Positive attitude of the TMC and other partners

Table 1 indicates the criteria that were followed in the selection of Magadi Taluk for promotion of PUA under the RUAF-CFF Project.

Table1. Selection Criteria for Magadi Taluk and Magadi Town.

Particulars/ Considerations	**Anekal**	**Kanakapura**	**Magadi**
District	Bangalore Urban	Ramanagar Previously in Bangalore Rural	Ramanagar Previously in Bangalore Rural
Distance from Bangalore, Kms Accessibility	40 Convenient Heavy traffic	56 Longer Moderate traffic	45 Convenient Easy access
Municipality Status	TMC	TMC	TMC
Water Supply	Tanks/Bore well	Arkavati River	Manchanabele dam/ tanks/ borewells
Households	8,000	9,878	7,200
Waste Management Present status Proposed system	No use of the wastes underground drainage system	No use of the wastes underground drainage, treatment plant	No use of the wastes underground drainage, solid waste management
Potential for Recycling and utilization of Wastes	Not seen/ Land value very high/ farmers not inclined to use the wastes.	High /Positive to recycling wastes. Awareness lacking among farmers	High/Welcome the initiative about waste management
Leadership	Not interested Not active	Interested Diverse interests	Interested Congenial
Officials Interest	Not Keen	Keen Responsive	Keen Responsive
Farming Interest	Not keen Not using Assistance	Keen Using Assistance	Keen Using Assistance
Scope for Horticulture	Vegetables grown in the taluk is mostly sold in Bangalore	Mainly arable crops with vegetables grown in some pockets	Vegetables grown in some pockets and sold locally & rest in Bangalore.
NGO presence	Not Seen	Not Visible	Active

Table 2. Magadi Taluk considerations, features and observations

Considerations	**Features**	**Observations**
Distance Accessibility	45 km from Bangalore with easy access	Convenient road from Bangalore
Administration	TMC for town & Taluk Panchayat	Interested and congenial leadership.
Interest of Officials	TMC, various Gov. Depts. & NGOs give good cooperation	Keen and responsive to PUA project idea
Motivation and farmer interest	Majority of population of Magadi Taluk and Magadi town are farmers and are largely dependent on agriculture based livelihoods	The Department of Agriculture and Horticulture are equally interested in assisting the project
Potential for use of organic wastes for agriculture	Population in Magadi town is about 25,000. SWM initiative has been proposed by TMC.	The possibilities are very high and the good initiative from the TMC is a welcome sign on waste management.
Availability of organic matter	Organic waste from Magadi town = 5-6 tones per day	Possible collaboration of TMC and Gov. Depts..including agriculture and Horticulture for waste recycling as compost.
Source of water for Magadi town	Manchanabele dam /tanks/ bore wells	
Source of water for Agriculture	Primarily Rainfed	Average rainfall is 800 mm per year
NGO presence	NGOs have good contacts in the villages through SHGs for credit and thrifty program, child rights activities & organic farming	No focus on agriculture programs but, with adequate orientation the existing NGOs could be good collaborators in the PUA program in this region.

***4. Geography and Climate**:*

Magadi taluk is associated with undulating terrain. Magadi has a rather salubrious climate owing to its average elevation of more than 900m above sea level. The maximum temperature during summer is 38 ^{o}C and the minimum 12 ^{o}C in winter. The average maximum and minimum temperatures are 33 ^{o}C and 14 ^{o}C respectively. The average rainfall is about 800 mm per annum. Most of it is received between June and September from the southwest monsoon. However, the northeast monsoon also brings rain for a short period during November to December.

Table 3. An overview of the Land use and agriculture Profile of Magadi Taluk:

Particulars Magadi Taluk	Geographical Area (ha)		Remarks
Total land area -Forest -Waste land -Uncultivable -Net Cropped area -Irrigated area	799,969 6,598 5,345 5,075 44,648 4,933		Information gathered from the Magadi Taluk head quarters land records Source of irrigation: Manchanabele reservoir/tanks/ wells
Average Rainfall, mm	800mm		Range = 780-850
Farmers profile:	Number of farmers	Holdings in hectors	Number of farmers refer to the farming families/ house holds. Actual number of individuals involved in the farming activities will be three times more especially in the case of small and medium farmers.
Total number of farmers	39,462	52,588	
Small farmers	31888	24077	
Medium farmers	7410	15881	
Big farmers	240	3371	
Crops grown:	Kharif	Rabi / Summer	Vegetables are grown throughout the year in some pockets of the Taluk, part of which is sold in Magadi town and the rest in Bangalore city.
Cereals			
Paddy	√	√ / √	
Ragi (Finger Millet)	√	√ / √	
Corn	√	√ / √	
Minor Millets	√		
Pulses			
Red Gram	√		
Field Beans (Dolichos)	√		
Black Gram	√	√	
Green Gram	√	√	
Cowpea	√	√	
Horse Gram	√	√	
Oilseeds			
Groundnut	√	/ √	
Sesamum	√		
Niger	√		
Castor	√		
Mustard	√		
NGOs working in and around the municipal area			Activity Focus
Kamadhenu Rural Integrated Dairy Devt Project			Livelihood improvement of rural educated youth through dairy.
DHAN Foundation- SHGs thrift and credit			Child rights/prevention of child abuses
Don Bosco			Child labour issues
Arkavati Grameena Abhivrudhi Sangha			Sustainable Agriculture
Chiguru			Organic farming/ Trainings
Sadhana			
LakshmiNarasimhaswamy Savayavakrishikara sangha			Organic farming
ICRA			Organic farming- Kalya village

Table 4. Horticultural Crops Grown in Magadi Taluk 2005-2006

Fruit Crops	Area (ha)	As a % of net cropped area*	**Vegetable Crops**	Area (ha)	As a % of net cropped area*
Mango	4995	11.18	Tomato	52	0.11
Banana	1605	3.5	Brinjal	35	0.07
Jack fruit	305	0.68	Beans	40	0.08
Chikku	265	0.59	Onion	70	0.15
Watermelon	12	0.02	Chilli	30	0.06
Spices			Knolkhol	11	0.02
Tamarind, Ginger, Turmeric and Garlic	11	0.02	Bhendi	15	0.03
			Greens	30	0.06
Flowers			**Garden Crops**		
Rose, Jasmine, Marigold, Chrisanthemum,	17	0.03	Coconut *Total trees*: 353,582 *Disease infected*: 325,412 *Healthy trees*: 28,170	3,440	7.70
			Areca nut	2,540	5.68
			Betel vine	17	0.03

NB: *Net cropped area value is derived from Table 3.

5. Farmers and the farming practices*:*

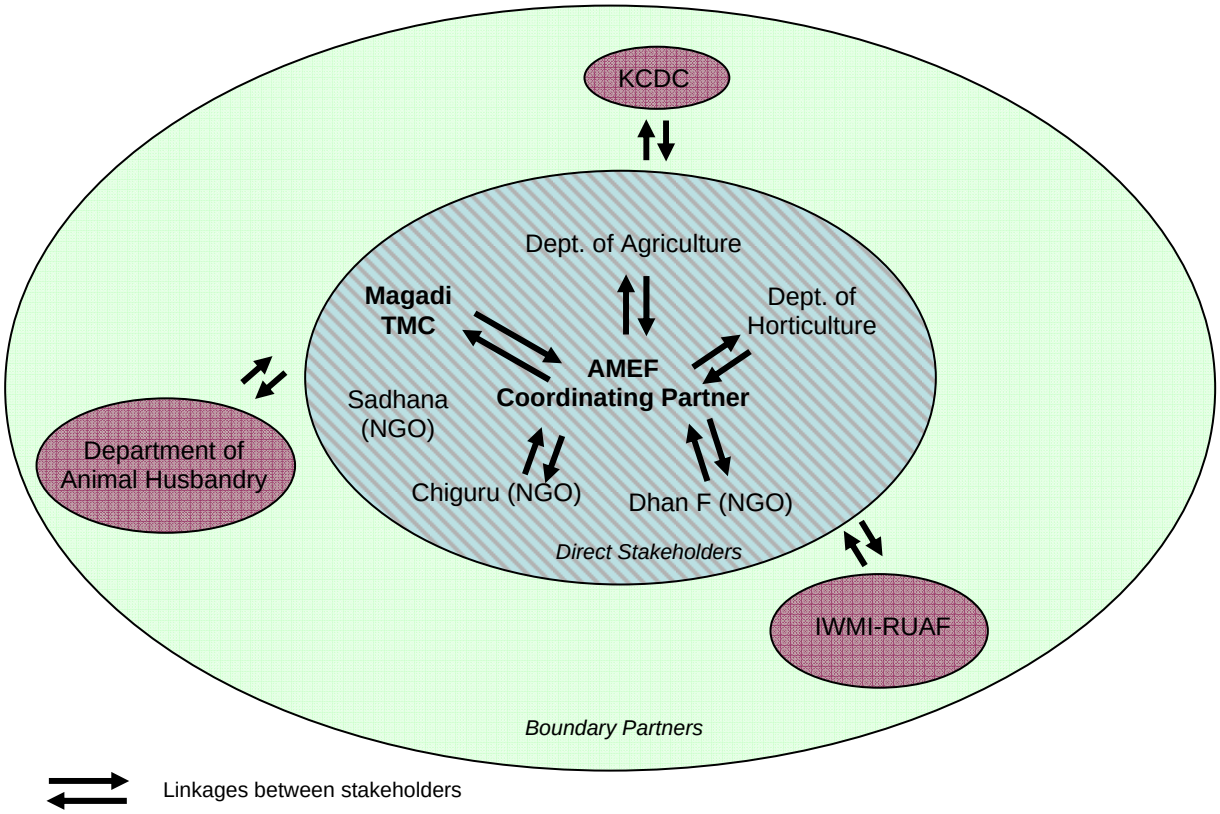
The relevance of the project in Magadi is also due to the fact that 60% of its population are small and marginal resource poor farmers who have several problems relating to agriculture production and marketing. Some of the key problems are the lack of a reliable source of quality seeds. Further, the farmers often lack awareness on the quality and quantity of inputs to be used. As a result, dealers of fertilizers and pesticides take undue advantage of farmers. Intensive chemicals farming with very little organic matter poses a serious threat to long-term soil quality and ecosystem stability. Another major problem is a fundamental shortage of water for crop production and appropriate use of the same when available. Farmers depend primarily on rainfall and a few farmers on bore-wells for irrigation. Increasing cost of diesel and availability of electricity and fluctuating voltage for pumping, depleting water tables as low as (700-1000ft) adds to the woes of the marginal farmers in this region. Agriculture is dominated by Kharif Season Cultivation.

6. Response from the mainstream organizations to the project:*:*

All potential stakeholders identified for the PUA project in Magadi are very positive and have offered overwhelming support from the participating in and implementing an initiative to promote PUA. For example from the Department of Agriculture, Mr. Neelakantappa, TA to ADA and the team offered support and are open to the project idea and happy to cooperate/collaborate for its success. All other mainstream organizations including the TMC and the Departments of Horticulture and Sericulture in the taluk have also expressed interest and support for the project. There are also a number of progressive farmers in the taluk who would be collaborators in farmer participatory research and innovation development. The concept of PUA has received a good response from Town Municipal Council: *Mr Munir Ahmad* (the then President), *Mr. Ranga Hanumaiah* (Ex President), Council members and *Mr Ramesh* (the health inspector). Most of the TMC councilors are basically farmers and they have welcomed the suggestions to the town biodegradable waste to improve farming in the surrounding villages.

The presence a several NGOs working in the area could also be an advantage since they have established contacts in the villages though they may not have a specific focus on agriculture programs. With adequate orientation and support some of these NGOs could be potential stakeholders in the PUA project in Magadi.

Current 'Enabling Team' in Magadi, Bangalore



7. Use of organic solid waste from Magadi town to re-cycle nutrient and improve soil fertility and water retention in farmer fields*:*

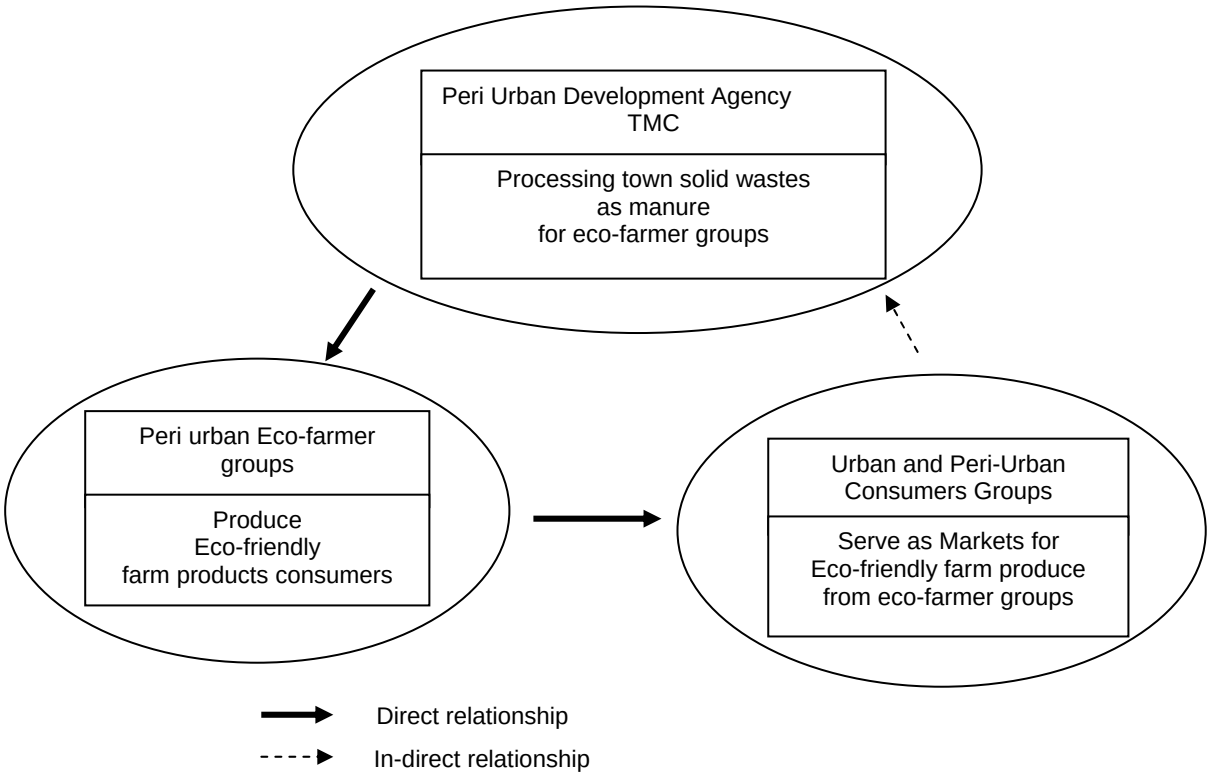
As yet, Magadi town does not have any established or scientific system of solid waste disposal. Availability of organic matter as solid waste from the town could be seen as a golden opportunity for the project to partner with the TMC to re-cycle nutrients and initiated a nutrient return flow. The present status of the solid waste handled by the TMC is a - daily collection of 5-6 tonnes which is dumped (non-separated) in a place identified by the TMC for the purpose. So far no productive use of the solid wastes is attempted by the TMC or any other organization. The drainage system in Magadi town is an open drain system and the flow is not sufficient to lead to any major collection point for recycling, though it is diverted to Margavati tank about 2 km from the town. This could be a matter for consideration at a later stage of the project namely, the appropriate treatment storage and utilization of the treated sewage water for agriculture.

It is a welcome sign that the Town Muncipal Council (TMC) is taking up SWM as a serious affair in keeping the environment clean. In this context recently the TMC has submitted two proposals one for the underground drainage system and the other for the solid waste management, (CD containing the details of these proposals has been presented to the RUAF-CFF Project). The Municipality is positive towards the proposal on the disposal, recycling and utilization of organic wastes.

7.1 Observations on the existing system of solid waste management in Magadi town*:*

The existing system of waste disposal is that the households in Magadi town have to segregate the waste in to organic and non-degradable before giving the segregated waste to persons who collect the waste daily at the doorstep. The TMC does not make any payments to those who collect it; but the households have to pay a nominal fee for collecting the waste, this is often a problem at present because households are reluctant in giving a fee saying - 'we are giving our garbage, why should we pay you'? Out of the 53 SHGs that are functional for various activities in the town only 2 groups have been involved in SW Collection. Hence there is and an opportunity to involve more SHGs in this activity.

Figure 2. Potential agricultural linkages between Peri-urban and Urban Areas of Bangalore and specifically, between Magadi Town and villages with a 3 km radius.



Annexes:

1. Data on agriculture profile of Magadi taluk
2. Statistics (General & Agricultural) of 8 Villages within a 3km radius of Magadi Town
3. Summary of Government Schemes (where available)
4. Summary of field interactions in Magadi and Surrounding villages

ANNEX 1.

Season wise area (ha) under different crops in Magadi Taluk: 2005-2006

	Area (ha)			
Crop Type	Kharif	Rabi	Summer	Total
Paddy	3,278	20	500	3,798
Ragi (Finger Millet)	26,104	60	150	26,314
Corn	182	11	10	203
Minor Millets	30	0	0	30
Total Cereals	**29,594**	**91**	**660**	**30,345**
Red Gram	855	0	0	855
Field Beans (Dolichos)	2,500	0	0	2,500
Black Gram	40	2	0	42
Green Gram	30	7	0	37
Cowpea	550	10	0	560
Horse Gram	2,015	355	0	2,370
Total Pulses	**5,990**	**374**	**0**	**6,364**
Groundnut	1600	0	90	1690
Sesamum	75	0	0	75
Niger	420	0	0	420
Castor	300	0	0	300
Mustard	160	0	0	160
Total Oilseeds	**2,555**	**0**	**90**	**2,645**
Total All Crops	**38,139**	**465**	**750**	**39,354**

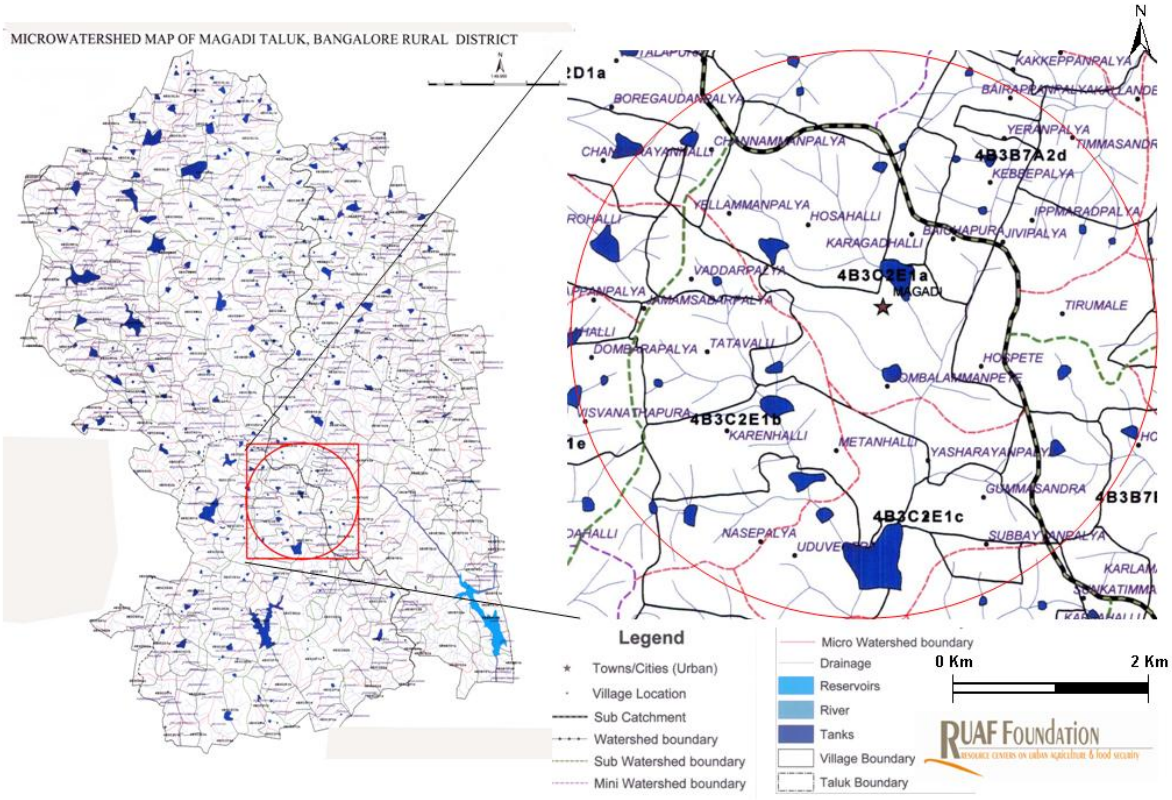
Kharif season agricultural production for Magadi Taluk 2006-2007.

Crop Type	**Area (ha)**	**Production Target (tonnes)**	**Production Achieved (tonnes)**
Ragi (Finger Millet)	26,104	26,000	13,789
Paddy	3,278	1,500	511
Corn	182	100	82
Minor Millets	30	60	44
Redgram	855	1,200	798
Field Beans	2,500	3,000	1,508
Cowpea	550	800	396
Horsegram and Others	2,085	1,000	726
Groundnut	1,600	500	89
Sesame	75	*	*
Sun Flower	*	*	12
Castor	300	400	165
Niger	420	300	90
Mustard	160	300	71
Sugarcane	*	20	17
Total	**38,139**	**35,180**	**18,298**

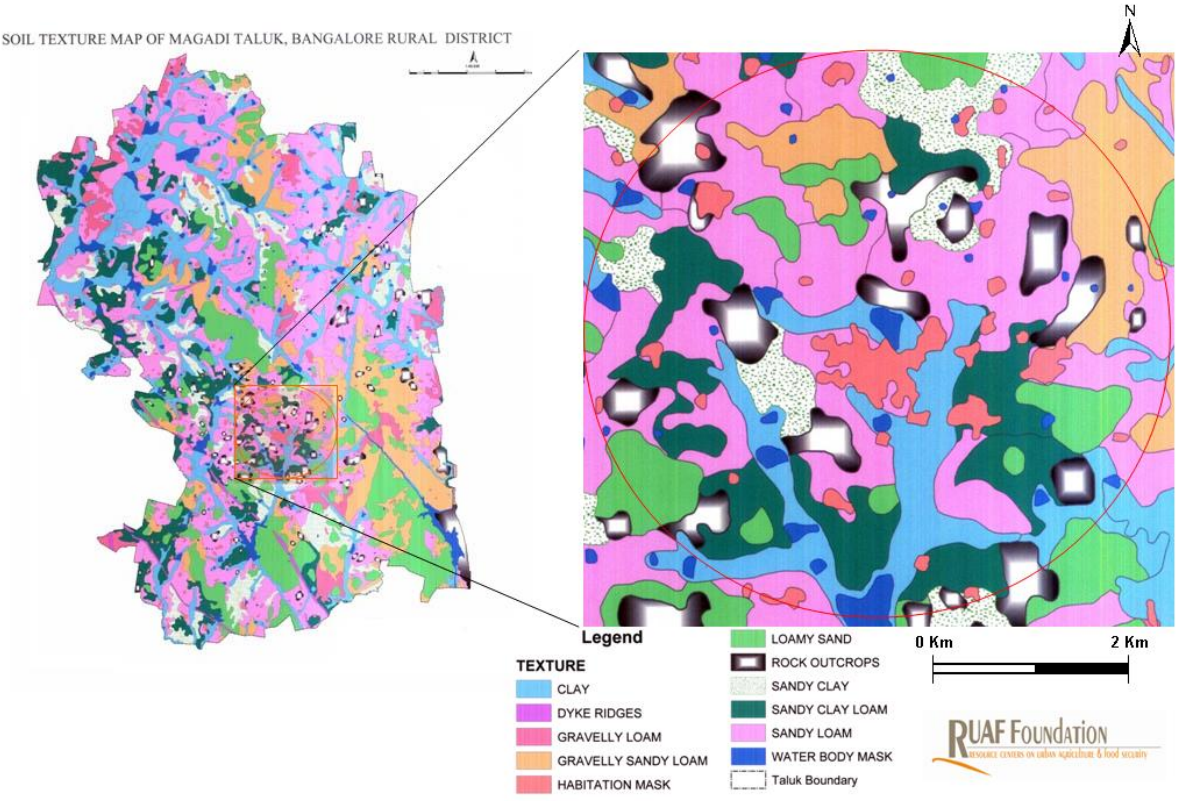
Proposed agricultural production targets for Magadi Taluk 2007-2008.

											Total 2007-2008	
Crop Type	Area (ha)	Kharif Season Production (t)	(kg/ha)	Area (ha)	Rabi Season Production (t)	(kg/ha)	Area (ha)	Summer Season Production (t)	(kg/ha)	Area (ha)	Production (t)	(kg/ha))
Ragi	26000	59800	2300	0	0	0	200	600	3000	26200	60400	2650
Paddy	1500	4500	3000	0	0	0	300	900	3000	1800		3000
Corn	400	1600	4000	0	0	0	0	0	0	400	1600	4000
Minor millets	60	37.5	625	0	0	0	0	0	0	60	37.5	625
Total Cereals	27960	65973	0	0	0	0	500	1500	0	28510	67473	0
Redgram	1200	750	625	0	0	0	0	0	0	1200	750	625
Field Beans	3000	1350	450	0	0	0	0	0	0	3000	1350	450
Cowpea	800	300	375	0	0	0	0	0	0	800	300	375
Horse Gram	1000	450	450	800	400	500	0	0	0	1800	850	475
Total Pulses	6000	2850	0	800	400	500	0	0	0	6800	3250	0
Groundnut	500	475	950	0	0	0	0	0	0	500	475	950
Castor	400	140	350	0	0	0	0	0	0	400	140	350
Niger	300	90	300	0	0	0	0	0	0	300	90	300
Mustard	300	90	300	0	0	0	0	0	0	300	90	300
Total Oil Seeds	1500	795	0	0	0	0	0	0	0	1500	795	0
TOTAL	70920	139200.5	0	800	400	500	500	1500	0	72220	141100.5	0

MICROWATERSHED MAP OF MAGADI TALUK, BANGALORE RURAL DISTRICT



SOIL TEXTURE MAP OF MAGADI TALUK, BANGALORE RURAL DISTRICT



ANNEX 2. MAGADI: VILLAGE STATISTICS

List of villages within 3 Kms of Magadi town.

Baichapura	Bairappanapalya	Chandurayanahalli √
Channamanapalya ↑	Dombarapalya	Gummasandra √
Hosahalli √	Hosapete	Ippamaradapalya
Jamamsabarapalya	Jivipalya	Kakkeppanapalya
Karagadahalli √	Karenahalli	Kebbepalya
Metanahalli √	Ombalammanapete	**Taggikuppe √ ↑**
Tatavalli	Timmasandra √	Tirumale √
Vaddarapalya	Yasharayanapalya	Yeranapalya
Yellamanapalya		
	Harohalli ↑	
	Dubbagattige ↑ (Jogipalya+Kallianapalya)	

√ Indicates villages for which statistics are available
↑ Indicates villages suitable for PUA

General Statistics

	Chandu Rayana halli	Gumma sandra	Hosa halli	Karagada halli	Melanaa halli	Thaggi kuppe	Thimma sandra	Thiru male
Distance to Hobli, Km	1	2	0	0	0	0	6	1
Distance to GP, Km	1	2	2	1	0	1	3	2
Distance to Taluk Hq, Km	1	1	0	0	0	0	15	1
Electrified Habitations, No	0	0	0	0	0	1	1	2
Geog Area, Ha	97	116	327	90	0	591	181	636
Total Cultivable Area, Ha	92	93	25	0	0	450	17	70
Total Canal Length, Km	0	0	3	0	0	2	0	0
Area Irrigated by Canals Ha	0	0	0	0	0	5	0	0
No of Tanks	1	0	1	0	0	5	0	0
Area Irrigated by Tanks, Ha	4	0	4	0	0	10	0	0
No of Wells	2	6	3	0	0	3	0	4
Area Irrigated by wells, Ha	0	0	1	0	0	1	0	12
Other sources	0	0	0	0	0	0	0	5
Area Irrigated other sources, Ha	0	0	0	0	0	0	0	13
Total Area Irrigated, Ha	0	0	0	0	0	0	0	25
Electrified Pumps, No	8	0	12	0	0	23	4	4
Non-Electrified Pumps, No	0	0	0	0	0	2	0	2
Total Forest Area, Ha	0	0	0	0	0	30	0	0
Area under Gram Thana, Ha	0	0	12	2	0	559	0	10
Total Male Population	258	506	80	99	95	616	206	219
Total Female Population	248	475	95	95	92	607	189	199
Total Population	506	981	175	194	187	1223	395	418
Total SC Male Population	104	0	3	61	9	92	12	6
Total SC Female Population	99	0	3	55	4	91	8	14
Total SC Population	203	0	6	116	13	183	20	20
Total ST Male Population	3	0	0	0	0	0	0	0
Total ST Female population	6	0	0	0	0	0	0	0
Total ST Population	9	0	0	0	0	0	0	0

Total Other Male population	151	506	77	38	86	524	194	213
Total Other Female population	143	475	92	40	88	516	181	185
Total Other Population	294	981	169	78	174	1040	375	398
No of Physically Handicapped	4	2	7	2	0	20	0	6
Total No of SC Famlies	48	0	30	3	0	28	4	66
Total No of ST Families	0	1	5	0	0	4	0	0
Total No of Other Families	130	147	84	30	0	215	35	34
Total No of Families	178	148	119	33	0	247	39	100
Total No of Agricultural Families	158	115	100	25	0	247	7	57

Agricultural Related Information

	Chandu Rayana halli	Gumma Sandra	Hosa halli	Karagada halli	Melanaa Halli	Thaggi kuppe	Thimma Sandra	Thirumale
AgrAsst/AAO Posts	0	0	0	0	0	0	0	0
AgrAsst/AAO Working	0	0	0	0	0	0	0	0
Dist AA/ AAO HQ Km	0	2	0	0	0	1	5	6
AgrAsst/AAO - Quarter(s)	0	0	0	0	0	0	0	0
Fertilzr Shops - Licenced	0	0	0	0	0	0	0	0
Fertilzr Shops Not Licenced	0	20	0	0	0	0	0	0
LandHoldings Marginal, No	0	60	0	0	0	102	9	28
Area Land Holdings– Marginal	0	30	0	0	0	501	30	28
No of Land Holdings – Small	0	30	0	0	0	63	11	22
Area of Land Holdings-Small	0	0	0	0	0	56	8	80
No of Land Holdings - Medium	0	0	0	0	0	125	10	6
Area of Land Holdings– Medium	0	20	0	0	0	375	10	83
No of Land Holdings - Big	0	60	0	0	0	59	2	5
Area of Land Holdings-Big	0	70	0	0	0	100	7	70
Total No of Land Holdings	0	150	0	0	0	247	32	61
Total area of Land Holdings	0	3	0	0	0	556	55	306
Area under Paddy	0	45	0	0	0	100	2	15
Area under Ragi	0	0	0	0	0	200	50	270
Area under Jowar	0	0	0	0	0	0	0	0
Area under Bajra	0	0	0	0	0	0	0	0
Area under Wheat	0	0	0	0	0	0	0	0
Area under Maize	0	1	0	0	0	0	0	0
Area under Other Cereals	0	20	0	0	0	5	0	5
Total Area under Cereals	0	58	0	0	0	0	55	280
Pulses	0	20	30	10	0	55	13	0
Area under Groundnut	0	5	0	0	0	14	6	7
Area under Sugarcane	0	0	0	0	0	0	0	0
Area under Cotton	0	0	0	0	0	0	0	0
Area under Hybrid/High Yielding crops	0	0	0	0	0	2	0	3
Total Area of Pulses	0	16	0	0	0	71	9	4
No of Horti Farms	0	0	0	0	0	0	0	3
Area under Coconut	25	15	15	0	0	15	9	6
Area under Grapes	0	0	0	0	0	0	0	0
Area under Chicco	0	1	0	0	0	2	0	3
Area under Mango	20	24	4	4	0	36	8	5
Watershed Area	0	0	0	0	0	0	0	0

NB: All areas in hectares (ha)

ANNEX 3.

Department of Agriculture: Action Plan for 2007-08

Soil Testing	Analyze 1300 samples
Subsidy for Plant protection	Rs 60,000
Subsidy for plant protection equipments	Rs 200,000
Agri-inputs distribution with 100% subsidy under special projects	Rs 20,000
Agri-inputs distribution with 100% subsidy under Tribal sub project	Rs 10,000
Oil seed Production Program	
Plant protection	Rs 15,000
Hand operated Plant protection equipments	Rs 20,000
Rhizobium culture	Rs 2,500
Micro-nutrients	Rs 16,000
Improved agricultural implements	Rs 6,000
Pulses Production Program	
Subsidy under NPV	Rs 1,675
RhizobiumCulture	Rs 4,000
Gypsum/pyrites distribution	Rs 6,000
Plant protection	Rs 15,000
Plant protection equipments	Rs 6,800
Improved agricultural implements	Rs 8,800
IPM Demonstration	Rs 11,400
Farmers training	Rs 15,000
Training of officials	Rs 16,000
Organic manure programme: Subsidy for Agri Gold @ Rs 2,250/Ton	Rs 110,000
Raita Samparka Kendra Demonstrations	Rs 5,000
Raita Samparka Kendra infrastructure/HRD	Rs 30,000
Plant protection programme under state sector:	
Organic pesticides- Subsidy	Rs 8,000
Phermone traps	Rs 5,000
IPM trainings	Rs 10,000
Subsidy for Bullock pairs	Rs 1,240,000
Subsidy for Bullock carts	Rs 1,240,000
Community threshing yard- construction	Rs 100,000
Agri processing units	Rs 950,000
Subsidy for sprinkler/drip irrigation & rain guns	Rs 1,900,000
Demonstrations:	
Hybrid Paddy	Rs 8,000
SRI method of Paddy cultivation	Rs 15,000
Subsidy for certified seeds	Rs 8,800
Organic farming programmes:	
Subsidy for green manure seeds	Rs 16,750
Subsidy for micronutrients	Rs 30,000
Subsidy for vermin-compost	Rs 20,000
Subsidy for liquid organic manure	Rs 4,000

8. Department of Horticulture: Action Plan 2007-2008: National Horticulture Mission

Objectives: To develop horticulture to the maximum potential available in the State and to augment production of all horticultural products (Fruits, Vegetables, Flowers, Plantation crops, Spices, Medicinal Aromatic plants) in the state.

- To provide holistic growth of the horticulture sector through an area based regionally differentiated strategies
- To enhance horticulture production, improve nutritional security and income support to farm households;
- To establish convergence and synergy among multiple on-going and planned programs for horticulture development;
- To promote, develop and disseminate technologies, through a seamless blend of traditional wisdom and modern scientific knowledge;
- To create opportunities for employment generation for skilled and unskilled persons, especially unemployed youth;

9. Crops covered: Mango, Grapes, Pomogranate, Banana, Pineapple, Cashew, Cocoa, Pepper, Ginger, Aromatic crops and Flowers.

9.1. Activities that can be covered by co-operatives:
- Post harvest management
- Cold storages
- Pack houses
- Refrigerator vans
- Mobile processing units.

9.2. Marketing activities
- Whole sale market
- Rural markets/Apni Mandis/Direct Markets
- Functional infrastructure for collection, grading etc.
- Extension, quality awareness and market led extension activities for fresh processed products

10. Existing co-operative institutions connected with horticulture: HOPCOMS, Nurserymen Cooperative Society, District Horticulture Society and SAFAL – NDDB.

***11. Micro Irrigation (MI) Scheme**:*

This scheme will be a Central Government Sponsored Scheme under which out of the total cost, 40% will be borne by the Central Government, 10% by the State Government and the remaining 50% will be borne by the beneficiary either through his/her own resources or through a soft loan from financial institutions.
- Assistance to farmers will be for covering a maximum area of 5 ha per beneficiary family.
- Assistance for drip and sprinkler demonstration will be 75% for the cost for a maximum area of 0.5ha per beneficiary, which will be met entirely by the Central Government.
- The Panchayati Raj Institutions (PRIs) will be involved in selecting the beneficiaries.
- All categories of farmers are covered under the Scheme. However, it needs to be ensured that at least 25% of the beneficiaries are Small & Marginal farmers.
- The focus will be on horticultural crops being covered under the National Horticulture Mission. However there is a provision to include all horticultural crops with cluster approach.
- The Scheme includes both drip and sprinkler irrigation. However, sprinkler irrigation will be applicable only for those crops where drip irrigation is uneconomical.
- There will be strong HRD input for the farmers, field functionaries and other stake holders at different levels. Besides there will be publicity campaigns, seminars/workshops at extensive locations to develop skills and improve awareness among farmers about importance of water conservation and management.
- The Precision Farming Development Centres (PFDCs) will provide research and technical support for implementing the scheme.

11.2 Other District Sector Schemes

1) Drip irrigation - Special subsidy for Horticultural crops
2) Scheme for seed coconut procurement and nursery maintenance, plant propagation & plant protection laboratories
3) Publicity and literature
4) Maintenance of Horticultural farms & Development of infrastructures
5) Horticulture Buildings
6) Cold Storage Subvention scheme
7) Training to farmers
8) Assistance to farmers for Extension of Area under Horticulture crops, Plant Protection, Social Horticulture, Development of show plants in front of Govt offices
9) Development of Mandal Nurseries
10) Oil palm cultivation in Potential states
11) Integrated farming in Coconut holdings with CDB assistance

ANNEX 4. Summary of field Interactions in Magadi and target villages

26.09.07:

- TMC meeting with the Chief officer: Briefed Chief Officer on the MPAP processes planned for the Magadi town and villages identified, for the PUA project.
- Department of Agriculture: Meeting with officers to gather agri-statistics for Magadi Taluk and to obtain their suggestions for identifying potential villages with 3km radius of Magadi Town.
- Department of Horticulture: Dept. Gathered information relating to horticultural crops grown in the Magadi Taluk.
- Meeting with the chief functionary – President of the "Lakshminarasimhaswamy Savayava Krishikara Sangha', an NGO engaged in National Horticultural Mission activities of Horticulture Department.

25.10.07

- Visited potential project implementation villages within 3km radius of Magadi Town to observe the general situation, meet farmers to introduce the RUAF-CFF project, objectives, MPAP approach and to evaluate their willingness to cooperate. The villages visited were Harohalli and Channammanakere on Kalya road and Taggikuppe, Jogipalya and Kallayanapalya on Solur Road.

2.11.07

- Made contact with 15-20 farmers and farm women at Jogipalya and Kallayanapalya along with representatives of women SHGs operating in the villages (for microfinance activities of DHAN Foundation) and discussed the possibility of forming "interest groups" related to PUA and LEISA Vegetable Production and marketing. The response of the farmers was positive and assurance was obtained to gather more farmers for the next meeting to generate further interest.
- Meeting with Mr. Madegowda, ADA, who joined on the same day and explained about the RUAF-CFF project activities. Mr. Madegowda assured his full support for the proposed activities. Obtained information regarding a Mr. Hanumarangaiah whom is a retired Department of Agriculture Officer who is carrying out work in a similar fashion to an NGO and has potential to cooperate with the project. ICRA is also operating in some villages of Magadi Taluk to promote organic farming.

7.11.07

- Visited Jogipalya and Kallayanapalya villages and had more interactions with the farmers about formation of '*interest groups'*. As the farmers were engaged in harvesting activities due to favourable weather conditions had discussions with a few contact farmers and women SHG leaders about fixing a suitable date for the next meeting. As per their suggestion, an evening meeting would be more effective and it was fixed for 5.30 PM on 14.11.07.
- Meeting with Department of Agriculture officials and informed them about the meeting of 14.11.07.
- Visited DHAN Foundation and met Mr. Chandresh, I/C of Magadi Federation and had discussions regarding PUA.
- Established contact with Mr. Babu, Secretary, ICRA Bangalore although local functionaries were not available for discussion.

14.11.07

- Meeting held with 30 farmers at Kallayanapalya village along with Mr. Paramashivaiah, an official from the Department of Agriculture. Discussions centered on the local cropping patterns and possibilities of group formation for PUA activities. Stressed that the PUA implementation is only for capacity building and no costs on field implementation are available.