

Supplementary
SOCIAL ASSESSMENT
HORTICULTURE COMPONENTS

Karnataka Watershed Development Project-II (Sujala-III)



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ACRONYMS AND ABBREVIATIONS

AAO	Assistant Agricultural Officer
AEZ	Agro-Ecological Zones
AO	Agricultural Officer
APD	Additional Project Director
BPL	Below Poverty Line
CCF	Chief Conservator of Forests
CBO	Community Based Organization
CCDI	Comprehensive Composite Development Index
CEO	Chief Executive Officer
CSO	Civil Society Organizations
CSS	Centrally Sponsored Scheme
CSWCRTI	Central Soil and Water Conservation Research and Training Institute
DD	Deputy Director
DLRC	District Level Review Committee
DoLR	Department of Land Resources
DPC	District Programme Coordinator
DPP	District Perspective Plans
DPR	Detailed Project Report
DRG	District Resource Group
DWDO	District Watershed Development Officer
DWDT	District Watershed Development Team
EC	Executive Committee
ED	Executive Director
EO	Executive Officer
EOP	End of Project
FGD	Focus Group Discussion
FM	Financial Management
GoI	Government of India
GoK	Government of Karnataka
GP	Gram Panchayat
GS	Gram Sabha
HD	Horticulture Department
ICT	Information and Communication Technology
IDA	International Development Agency
IEC	Information, Education and Communication
IGA	Income-generating activities
IWDP	Integrated Wasteland Development Project
IWMP	Integrated Watershed Management Programme
JAO	Junior Agriculture Officer
JD	Joint Director
JE	Junior Engineer

KIIs	Key Informant Interviews
KSRSAC	Karnataka State Remote Sensing Application Centre
KWDP	Karnataka Watershed Development Project
MEL	Monitoring Evaluation and Learning
MGNREGA/S	Mahatma Gandhi National Rural Employment Guarantee Act/Scheme
MI	Minor Irrigation
MIS	Management Information Systems
MoRD	Ministry of Rural Development
MPR	Monthly Progress Report
NBSSLU	National Bureau of Social Survey and Land Use
NGO	Non Governmental Organization
O&M	Operation and Maintenance
OP	Operational Policies
PIA	Project Implementing Agency
PIU	Project Implementation Unit
PRA	Participatory Rural Appraisal
PRI	Panchayati Raj Institutions
PD	Project Director
PDO	Panchayat Development Officer
PDO	Project Development Objective
PO	Programme Officer
RDPR	Department of Rural Development and Panchayati Raj
RI	Revenue Inspector
SA	Social Assessment
SAU	State Agricultural Universities
SC	Scheduled Caste
SHGs	Self-Help Groups
SLNA	State Level Nodal Agency
ST	Scheduled Tribe
SWC	Soil and Water Conservation
SWS	Sub Watersheds
ToR	Terms of Reference
TP	Taluk Panchayat
UAS	University of Agricultural Sciences
UG	User Group
WB	World Bank
WC	Watershed Committee
WCDC	Watershed Cell and Documentation Centre
WDD	Watershed Development Department
WDT	Watershed Development Team
ZP	Zilla Panchayat

Social Assessment (Supplementary)

I. INTRODUCTION

1. The World Bank, Government of India and Government of Karnataka are currently engaged in preparing the Karnataka Watershed Development Project II (Sujala-III). The project preparation initially was focused rather exclusively around Rain-fed Agriculture. Accordingly, three major components/ interventions had been envisaged – (i) Support for Improved Program Integration in Rainfed Areas; (ii) Research, Development and Innovation; and (iii) Institutional Strengthening. In this context, Watershed Development Department (WDD), Government of Karnataka (GOK) undertook a Social Assessment (SA) Study as a part of the project preparation activities, to ensure that development initiatives contribute to inclusive development and poverty reduction. The SA enabled: (i) identifying and analyzing key social issues and related factors that have a bearing on the achievement of project objectives; and (ii) based on this analysis, provide suitable inputs to the design of the project to ensure sustainable and equitable flow of benefits to project populations in general and vulnerable groups in particular. Project Appraisal was completed and plans were afoot for negotiation. At this juncture, GOK decided to introduce another intervention – Horticulture Component – aimed at strengthening the knowledge base regarding horticulture potential in rainfed areas, and demonstrate and build the capacity of institutions and communities to improve production and value addition of horticulture in project areas. This intervention has four major activities:

- (i) Extension and demonstrations for productivity improvement in annual and perennial crops, nutrition gardens, crop diversification and crop-soil-water relationship in improving the productivity of horticulture crops;
- (ii) Strengthening model nurseries in the existing farms of the Department of Horticulture to ensure a more continuous supply of quality seed and planting material to farmers;
- (iii) Promoting horticulture soil and crop monitoring through enhanced laboratory facilities and facilitating farmers in project areas to use these facilities for soil and leaf tissue analysis;
- (iv) Strengthening post-harvest management, value-addition and market linkage support through feasibility studies and participatory value chain investigations, field demonstrations of low-cost equipment, and expanding skill development programs for local communities; and
- (v) Improving market linkages for farmers through establishment of producer companies in project areas.

2. This additional component meant re-visiting the earlier conducted SA and reinforcing with supplementary information. Hence, this report reflecting the findings of a Supplementary Social Assessment (SSA) conducted exclusively focused on the Horticulture Component (Component 4). The SSA was conducted adopting the same approach and

methodology as that of the earlier SA but, covered a fewer sample micro-watersheds. Four micro-watersheds, two from each of the districts of Gulbarga and Davanagere constituted the scope of the in-depth enquiry. Study findings are presented in – sections.

II. BASELINE STATUS OF HORTICULTURE

3. Household surveys reveal that the project districts in general are horticulturally backward. Across the project watersheds, horticulture farmers account for about 17% of the total farming households. Davanagere, being relatively well developed with commercial agriculture, has the highest proportion of horticulture farmers (30%), followed by Chamarajnagar where one-fourth of the farmers pursue horticulture. Koppal has the lowest percentage (6%) of horticulture growers among project watersheds (Table-1). Across the project districts, Davanagere, Chamarajnagar and Gadag have sizeable horticultural presence. It is quite instructive to note that 40% of the horticulturists have land holdings more than 5 acres viz., fall into the category of Large Farmers (Table-2). The average cropped area under horticulture crops from one acre to more than six acres, average being about 2.5 acres. It is quite evident that horticulture fetches are much higher income as compared to food crops. However, three factors dissuade small/ marginal farmers from horticulture: (i) initial capital requirements are high; (ii) longer gestation period; and (iii) risks and uncertainties in terms of both crop damages due to pests and diseases as well as market prices.

Table 1: Horticulture in project districts

Bidar	Chamaraj nagar	Davanagere	Gadag	Gulbarga	Koppal	Yadgiri	All districts
Proportion of horticulture farmers among all farmers							
20.47%	24.07%	28.76%	18.11%	9.15%	5.59%	9.43%	16.63%
Proportion of horticulture farmers (ranking)							
3	2	1	4	6	7	5	
Number of horticulture farmers (ranking)							
5	1	3	2	6	4	7	
Total area under horticulture crops (ranking)							
5	2	3	1	4	6	7	

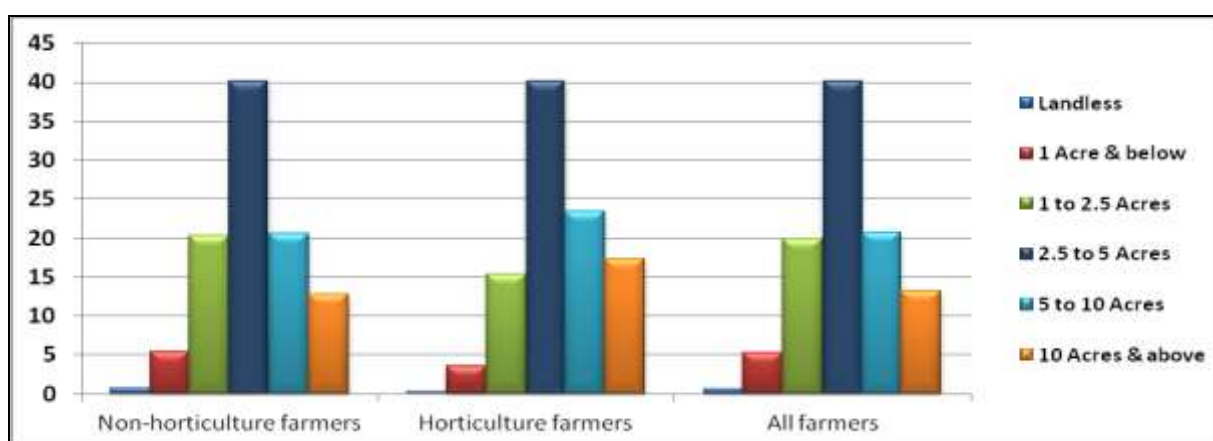
4. As stated earlier, this SA was conducted in two representative districts - one horticulturally advanced district (Davanagere) and one horticulturally lagging district (Gulbarga). The contrasting situations have been analyzed so that key lessons can be drawn from it. Horticulture gathered momentum in the late 1990s but Gulbarga farmers are relatively late entrants to horticulture. In fact, the time line mapping exercise confirm amply of this aspect (Attachment-1). The sample micro-watersheds are relatively drier and poorer – with the proportion of the poor ranging from 45% to 80%. The proportion of horticulture farmers ranges from as low as 9% to 29% (Table-2). Instructively, more number of large farmers are into horticulture. However, area under horticulture is far less (2-16%). Borewell is the chief source of irrigation in all locations. Infact, most of the horticulturists do own a bore well indicating the need for irrigation as a prerequisite for horticulture. A broad range of horticultural crops are raised in the project watersheds. For the sake of convenience, the crops are classified into: vegetables, fruits, flowers, plantation crops and spices, aromatic and medicinal plants. The productivity and income levels of horticulture crops have shown an

upward trend over the years. Among the crops, Areca nut and Banana fetches higher returns. With the result, area under these crops has increased. Overall, awareness levels about the importance of horticulture are on the rise as increasingly farmers are willing to diversify into horticulture.

Table 2: District Profile

	Gulbarga	Davanagere
Total Area	1,610,208 ha	597,597 ha
Talukas	7	7
Number of horticulture farmers	20000	150000
% of horticulture farmers among all farmers	9%	29%
% of small & marginal horticulture farmers	50%	40%
Average horticulture area per farmer	3-4 acres	2-3 acres
Horticulture farmers with Borewells	75%	70%
% of horticulture area in net area sown	2.06%	15.77%

Figure 1: Landholding categories of horticulture farmers (in %)



5. One of the key attractions for horticulture lies in higher incomes. Some of the horticulture crops undoubtedly fetch an income far higher than other field crops (Table-3).

Table 3: Horticulture and Non-Horticulture Crop Incomes*

Major horticulture crops	Mean income per acre in Rs	Major non-horticulture crops	Mean income per acre in Rs
• Banana	284240	• Chickpea	19750
• Beans	9250	• Cotton	17896
• Chillies	66313	• Groundnut	14790
• Coconut	237146	• Jowar	14647
• Onion	23343	• Maize	10887
• Turmeric	115606	• Paddy	6478
• Pepper	15547	• Ragi	8413
• Areca nut	361555	• Soya beans	9311
• Flowers	42733	• Sugarcane	47306
• Tomato	122833	• Sunflower	10048

• Lady finger	35000	• Pigeon pea	10475
• Bottle gourd	11000	• Green gram	10989
• Lemon	45000	• Cowpea	5667
All crops	119234	All crops	11851

* Incomes reported are gross incomes

6. Horticulture farmers have much higher levels of household incomes, in other words horticulture, inter alia, enabled them to move up the income hierarchy; and horticulture farmers are concentrated among the higher income categories (Table-4). These findings are also broadly corroborated by the PRA results which show that smallholders constitute a minority of horticulture farmers.

Table 4: Household incomes: Horticulture and Non-Horticulture farmers

Household income category (in Rs)	Non-horticulture farmers	Horticulture farmers
Up to 10,000	2.49%	2.60%
10,000 to 30,000	24.02%	15.60%
30,000 to 50,000	29.99%	20.33%
50,000 to 75,000	18.75%	14.89%
75,000 to 100,000	10.75%	12.06%
100,000 to 200,000	10.67%	21.04%
Above 200,000	3.32%	13.48%

7. The above results reveal the potential horticulture has in terms of contributing to household incomes. Yet, it is not wide spread as the area under horticulture is quite non-significant. It also seems to be concentrated more among larger farmers. Some crucial factors, constraining horticultural development include:

- Lack of general awareness about horticulture; and its role and economic and livelihood importance.
- Relatively low penetration of Horticulture Department.
- Relatively high temperature in some pockets
- Lack of role models in the form of champion farmers or progressive farmers.
- Absence of enterprising and risk-taking farmers.
- Lack of assured irrigation.
- Poor infrastructure and connectivity
- Marketing constraints and excessive dependence on intermediaries
- Lack of quality planting material, technical support and capacity-building.
- Planting materials are supplied mostly from private nurseries only.

III. STAKEHOLDER ANALYSIS

8. Stakeholder analysis is a vital tool for understanding the social and institutional context of a project. Its findings can provide early and essential information about who will be affected by the project (positively or negatively); who could influence the project (again, positively or negatively); which individuals, groups, or agencies need to be involved in the project, and how; and whose capacity needs to be built to enable them to participate.

Stakeholder analysis, therefore, provides a foundation and structure for the participatory planning, implementation, and monitoring that follows. A list of a broad range of stakeholders identified at various levels is presented in the following table. The stakeholders have been presented in two broad categories—direct and indirect. In all, there are 64 groups of Direct Stakeholders and 40 groups of Indirect Stakeholders.

Table 5: Stakeholder Mapping

5.1 VILLAGE/MICRO-WATERSHED LEVEL	
Direct Beneficiaries	Indirect Beneficiaries
<ol style="list-style-type: none"> 1. Horticulture farmers: large, medium, small, marginal 2. Share croppers and tenants 3. Agricultural labourers (male & female) 4. Landless 5. Non-farm wage workers (male & female) 6. Labourers working under the MNREGA 7. Common villagers (using common property resources for drinking water, fuel wood, bathing, toilet, washing clothes, performing rituals, etc.) 8. Women's SHGs 9. Tribal groups or communities 10. Scheduled Castes 11. Ward member/representative (GP) 12. Government functionaries (Assistant Horticulture Officer and Horticulture Assistant of <i>Horticulture Department</i>, Village Revenue Officer & Surveyor of <i>Revenue Department</i>; Engineers of <i>Minor Irrigation Department</i>; Forest guard of <i>Forest Department</i> and Village Agriculture Assistant of <i>Agriculture Department</i>, Agriculture Assistant of <i>Watershed Department</i>) 13. NGO functionaries 14. Farmer members of HOPCOMS 15. Water User Committee/Tank User Groups 16. Joint Forest Management Committee 	<ol style="list-style-type: none"> 1. Traders and buyers of horticultural produce. 2. Retailers (sellers of products like seeds, pesticides, fertilizers and farm implements) 3. Local informal credit institutions (money lenders, pawn brokers, etc.) 4. Primary schools 5. Private nurseries. 6. Owners of post-harvest infrastructure such as pack houses, dehydration units. 7. Representatives of private seed companies that have entered into buy-back agreements with horticulture farmers.
5.2 PANCHAYAT LEVEL	
Direct Beneficiaries	Indirect Beneficiaries
<ol style="list-style-type: none"> 1. President/Sarpanch (Gram Panchayat) 2. Panchayat Secretary/ PDO 3. Technical Assistants (NREGA) 4. Village Agriculture Assistant – Agriculture Department 5. Panchayat level SHG Federation 6. Horticulture Department (AHO, HA) 7. Forest Department (Forest guard) 8. Post office 9. Local Bank 	<ol style="list-style-type: none"> 1. Traders (buyers) and retailers (sellers) 2. Primary/Secondary schools 3. Nurseries – managed by farmers and private sector
5.3 TALUKA LEVEL	
Direct Beneficiaries	Indirect Beneficiaries
<ol style="list-style-type: none"> 1. Horticulture Growers Associations 2. Senior Assistant Director of Horticulture or Assistant Director of Horticulture from Horticulture Department 3. Tehsildar and Revenue Inspectors 	<ol style="list-style-type: none"> 1. Sellers/retailers of agricultural inputs and implements/equipment 2. Private nurseries 3. Government nurseries

<ol style="list-style-type: none"> 4. Chairman, Taluka Panchayat 5. Executive Officer (Taluka Panchayat) 6. Taluka level Official of WDD/ Agriculture Officer 7. Agriculture Officer (AO) / Assistant Agriculture Officer 8. Junior Engineer (JE), Minor Irrigation 9. Forest Official/Ranger (RFO) 10. NGO functionaries & other civil society organizations 11. Assistant Engineer (Minor Irrigation) 	<ol style="list-style-type: none"> 4. APMC markets 5. Transporters 6. Representatives of seed companies 7. Banks/Credit institutions 8. Transporters 9. Media 10. Micro-finance institutions (MFIs) or their representatives
5.4 DISTRICT LEVEL	
Direct Beneficiaries	Indirect Beneficiaries
<ol style="list-style-type: none"> 1. Deputy Director, Horticulture 2. District HOPCOMS 3. Government nurseries & horticulture farms 4. Water & soil testing labs 5. Plant Health Clinics 6. Horticulture clinics 7. District Watershed Development Officer (DWDO) 8. Zilla Panchayat CEO 9. Zilla Panchayat, Chairman 10. Executive Engineer (Minor Irrigation) 11. Joint Director, Agriculture (JDA) 12. Divisional Forest Officer 13. NGO Functionaries 14. Officials of other Line Departments/Agencies 	<ol style="list-style-type: none"> 1. Formal credit institutions/banks 2. Traders of horticulture produce 3. Suppliers of farm equipment & machinery 4. Cold storages. 5. APMC market 6. Processing and value addition centres 7. Private nurseries 8. MLA/MP 9. Media 10. NGOs 11. MFIs 12. Private seed companies
5.5 STATE AND NATIONAL LEVEL	
Direct Beneficiaries	Indirect Beneficiaries
<ol style="list-style-type: none"> 1. Department of Horticulture 2. HOPCOMS 3. Organic Farmers' Associations 4. Watershed Development Department 5. Chief Engineer, Minor Irrigation 6. Department of Agriculture 7. SC & ST Development Department/Corporation 8. Revenue Department 9. Department of Forest 10. Technical Support Agencies (from government and non-government sector) 11. Research Institutions such as IIHR and Agri Universities 12. Social Development Agencies / NGOs <p>Country level</p> <ol style="list-style-type: none"> 1. Government of India Ministries and Departments: Horticulture Department, Rural Development, Panchayati Raj, Water Resources, Finance, Forest, Agriculture 2. The World Bank 	<ol style="list-style-type: none"> 1. Traders (buyers/sellers/distributors) 2. Transporters 3. Companies making farm equipment & machinery such as micro-irrigation systems. 4. Formal Credit Institutions 5. Nurseries 6. RRBs, Cooperative Bank & Commercial Banks 7. Agro Industry – seed, processing and value addition industry 8. Media (print & electronic)

Perceived Impacts

9. Impacts likely to occur as a result of the proposed project interventions by different stakeholders reveal a highly encouraging scenario (Table-6). Most impacts, as perceived by the stakeholders themselves, turn out to be positive. While there are some concerns on the project's effectiveness in reaching them, no negative impacts are recorded. The concerns are treated rather as 'issues' requiring attention in making adjustments into the institutional and implementation arrangements.

Table 6: Impacts on Beneficiaries

Sl No	Stakeholders	Perceived Impacts	Type of Impact*
1	Large and medium Farmers	<ul style="list-style-type: none"> ● Expanded area under horticulture ● Enhanced horticultural productivity and production, particularly of high value crops. ● Higher and regular income from horticulture ● Capacity building/enhancement with respect to horticulture technologies and practices. ● Reduced input costs through application of organic inputs and other sustainable practices ● Better marketing and post harvest facilities through the strengthening of Horticulture Producers Cooperative Marketing Societies. ● Horticulture producer organizations/companies (PCs) would make horticulture more profitable and sustainable by providing better forward and backward linkages. ● Appreciation in market/commercial value of their lands ● Improved nutritional status of farming households ● Improved access to quality planting material ● Access to post-harvest processing and value addition ● Improved access to latest technologies 	P
2	Small and marginal Farmers	<ul style="list-style-type: none"> ● Improved capacity to diversify into horticulture crops and to access related services. ● Improved access to irrigation facilities. ● Enhanced horticulture productivity and production leading to higher household incomes. ● Capacity building/enhancement with respect to horticulture technologies and practices. ● Reduced input costs through application of organic inputs and other sustainable practices ● Participation in horticulture development initiatives leading to a more equitable distribution of benefits and higher level of sustainability. ● Reduced dependence on money lenders and greater access to formal financial institutions and Horticulture Department. ● Greater access to and income from land leasing ● On-farm and off-farm wage employment opportunities during project implementation resulting from area expansion under horticulture and infrastructure creation. ● Improved access to quality planting material 	P

		<ul style="list-style-type: none"> • Improved nutritional status of farming households • Enhanced participation in HOPCOMS and higher level of support from HOPCOMS with respect to post-harvest activities. • Horticulture producer organizations/companies (PCs) would make horticulture more profitable and sustainable by providing better forward and backward linkages. 	
3	Landless and agricultural wage labour	<ul style="list-style-type: none"> • Greater access to and income from land leasing • On-farm and off-farm wage employment opportunities during project implementation resulting from area expansion under horticulture and infrastructure creation. • Improved nutritional status resulting from nutrition gardens. • Higher number of person days of work under the NREGA on account of convergence between Horticulture Department and the NREGA. 	P
4	HOPCOMS	<ul style="list-style-type: none"> • Increased farmer membership benefiting larger pool of horticulture farmers. • Greater access to processing and value addition • Remunerative price for farmers thus reducing the risk of price fluctuations. • Enhanced level of sustainability of horticulture in the project districts. • Improved socio-economic status of farmer members • Increased capacity of farmers • Better quality produce at lower prices for consumers • Strengthened HOPCOMS will pave the way for institutionalization and professionalism. 	P
5	Horticulture Department	<ul style="list-style-type: none"> • Increased staff strength leading to effective implementation of the project. • Additional infrastructure/equipment such as office spaces and vehicles. • Enhanced capacity of the Department – particularly in dryland horticulture. • Timely supply of quality planting material following modernization and upgradation of existing horticulture farms. • Strengthened HOPCOMS delivering efficient services to horticulture farmers. 	P
7	Traders & seed companies	<ul style="list-style-type: none"> • Increased demand for inputs and equipment • Improved capacity of farmers and increased area under intensive and precision farming. • Increased number of contract farmers. 	P

**P: Positive; N: Negative*

Expectations and/ or Concerns of Stakeholders

10. SA had extensive consultations with both prospective and existing horticulture farmers to understand their views about their expectations from the proposed project. They do realize

that impacts are likely to be highly positive. So, while the current horticulturists would very much like to expand their interests, prospective farmers too are willing to diversify into horticulture. However, there are some concerns and/ or expectations. A summary of the same is presented in Table-7.

Table 7: Expectations of the key Stakeholders

Stakeholders	Expectations
1. Prospective/ Existing Horticulture Farmers	<ul style="list-style-type: none"> ● Reliable irrigation facility through support for individual as well as common bore wells or lifts irrigation. ● Capacity building initiatives on new horticultural technologies and practices such as grafting, crop management, IPM, INM, processing and value addition. On-farm demonstrations are suggested as an effective intervention. ● Regular Technical Support and advice from Horticulture Department covering aspects such as soil/ water testing, leaf analysis, suitable varieties and methods of propagation, crop monitoring, diseases, fertilizers and seeds. ● Timely supply of quality planting material. ● Crop protection from wild animals and livestock – fencing is suggested as the most effective solution. Farmers are ready to contribute up to 30% of the cost of fencing. ● Better post harvest facilities such as Appropriate Transport facilities, Ripening Units, Storage and Processing facilities. ● Remunerative and stable prices for their produce. ● Prepared to make monetary contributions – up to 15% of the investment – for horticulture infrastructure in their areas such as pack houses, storages, vermicompost units and processing units. ● Welcomed the idea of nutrition gardens and are prepared to grow them and expect quality seed and planting material. Space is not a constraint for nutrition gardens. ● Welcome the idea of, and seek assistance in establishing horticulture producers associations at watershed or village level. ● Like to grow crops which have high market potential such as mango, sapota, Amla, custard apple, guava, tamarind, pomegranate and coconut.
2. Agricultural labour 3. Landless Laborers	<ul style="list-style-type: none"> ● Wage employment through horticultural activities and increased area under cultivation. ● Expect additional employment through processing and value addition interventions. ● Expect incremental employment through convergence between Horticulture Department and the NREGA. ● Homestead gardens for internal consumption ● Look forward to opportunities to lease land for horticulture.
4. Women’s SHGs	<ul style="list-style-type: none"> ● Prepared to participate in the implementation of the proposed horticultural interventions with greater commitment and transparency than men. ● They expect processing and value-addition interventions which are expected to enhance their livelihoods by providing additional employment and income. ● Expect training and other capacity-building activities as women play a critical role in horticulture, particularly in crop management and value

	<p>addition.</p> <ul style="list-style-type: none"> • Training and financial assistance to set up nurseries. • Would like to play an important role in the management of nutrition gardens.
5. Non-farm wage Workers	<ul style="list-style-type: none"> • There are two broad categories: skilled and unskilled/semi-skilled. The first category consists of workers such as carpenters, electricians, masons, drivers and the second category comprises mostly construction workers. Both categories of workers expect benefits in the form of employment when the project builds horticulture infrastructure such as processing centers, cold storages and nurseries.
6. Scheduled Caste/ Tribe Households	<ul style="list-style-type: none"> • Land development activities on their lands such as bunding, fencing and leveling. • Ready to diversify into horticultural crops; they prefer crops such as mango. • More wage employment resulting from project interventions. • Expect assured irrigation to their crops; for instance, through common tube wells or lift irrigation. • On-farm demonstrations (OFDs) and other capacity-building initiatives. • Expect more drip irrigation systems on their farms.
7. PRI Members	<ul style="list-style-type: none"> • They welcome the proposed horticulture interventions. • Expect area extension under horticulture • More drip irrigation systems to foster horticulture • Processing units for different crops • Access to quality planting material whenever farmers need them. • Regular technical support & guidance from government agencies. • Assured irrigation for horticulture, particularly for poor farmers. • Would like their involvement in decision making and implementation.
8. NGOs	<ul style="list-style-type: none"> • Recommend a package of interventions for dryland horticulture • Replication of well known Bharatiya Agro Industries Foundation (BAIF) Wadi model which has been implemented in the Tribal areas in the country. • Focus of proposed interventions should be on small and marginal farmers. • Would like to be involved in the project, playing facilitative roles in areas such as social mobilization, capacity building and institution-building , marketing, processing, value addition and capacity-building
9. Nurseries	<ul style="list-style-type: none"> • Increased demand for planting material due to larger area coming under horticulture. • Financial assistance and technical support to expand their capacity and produce new and more diverse planting material • Coordination needed between private nurseries and government nurseries.
10. Traders & seed companies	<ul style="list-style-type: none"> • Farmers' capacity will be built and infrastructure will improve under the project bringing more area under intensive and precision farming. • Increase in the number of contract farmers. • Increased demand for seeds. • Increased demand for inputs.
11. HOPCOMS	<ul style="list-style-type: none"> • Institutional Strengthening of HOPCOMS through higher and reliable funding • Imbibing professionalization and commercialization. • Regular staff to make HOPCOMS more efficient and professional • Provision of sites for markets

	<ul style="list-style-type: none"> • More outlets • Vans/trucks to procure and market horticulture produce • Own office buildings • Procurement and ripening centers. • Increased farmer membership. • Cooperation and coordination among HOPCOMS for procurement and marketing purposes.
12. Government Functionaries	<p>Horticulture Department</p> <ul style="list-style-type: none"> • Staff strength is likely to increase to effectively implement the project particularly at the district and field level. • Additional infrastructure/equipment such as office spaces and vehicles. • Capacity-building of staff. • Strengthening and upgradation of existing horticulture farms. • Strengthening of HOPCOMS <p>University of Agricultural Sciences and other R&D Institutes</p> <ul style="list-style-type: none"> • Expect that they will get opportunities to undertake technology transfer and capacity-building activities such as farmer field schools, on-farm demonstrations and training programmes. • They expect that the project will provide them an opportunity to try out interventions such as integrated and sustainable technologies and practices such as Integrated Pest Management, Integrated Nutrient Management, on-farm water management and dry land horticulture.

Key Issues Identified Through Stakeholder Consultations

11. Stakeholder consultations raises the following 5 key issues which needs to be taken due note of while designing the project:

- (i) ***Pro-Poor focus:*** Horticulture has a huge potential to enhance farm incomes, but so far, has remained the forte of relatively large/ rich farmers. In order to gain wide spread prominence, it is essential to have a pro-poor focus viz., bring more marginal/ small farmers into the ambit. This would entail fulfilling a lot of prerequisites – technical, institutional and financial aspects. The intervention strategy should be underpinned by the Value Chain Concept, addressing all facets right from the lab-farm-consumer.
- (ii) ***Capacity Support and Building:*** Irrigation facility is a definite pre-requisite. Regular technical support and advice needs to be supplemented with continuous on-farm training.
- (iii) ***Institutional Development at grassroot level:*** Farmers need to be mobilized for group action, into Common Interest Groups (CIG), and be provided a platform to interface with the external world. Designing be done such as to enable participation by poor and vulnerable sections.
- (iv) ***Enabling environment and post-harvest facilities:*** Human and Institutional development initiatives resulting in appropriate institutions/ agencies at different

levels to provide for not only a coordination platform but also ensure appropriate backward and forward linkages.

- (v) ***Social Intermediation by NGOs and/ or SHGs***: External facilitation is essential to ensure piloting innovations as well as enmeshing rain-fed agriculture and horticulture households/ activities.

IV. SOCIAL SAFEGUARDS

12. The SA examined the World Bank's safeguard policies that are relevant to the current project. Then, based on the project interventions it examined whether the relevant safeguard policies are applicable or not. Two Operational Policies (OPs) of the Bank have been examined:

- OP 4.12 on Involuntary Resettlement
- OP/BP 4.10 on Indigenous Peoples

13. **Indigenous Peoples (OP/BP 4.10)**: There are some officially designated Scheduled Tribe (ST) households/ population in the project area. However, a review of their socio-economic and cultural profile reflects that they are no different from the Other Households. None of the ST households live in exclusive clusters/ habitations. They all speak the state's official mainstream language, Kannada. Religious practices, rituals, customs, festivals, shared burial ground; shared water sources do not distinguish the ST population from the Non-STs. They also possess land holdings and asset ownership similar to others and have equal access to all the social amenities as well as economic infrastructure facilities in the society. Livelihood pattern too are the same across both STs and non-STs. Based on these, it is concluded that STs are fully mainstreamed and that there are no Indigenous Peoples in the project area. Hence, there is no need to trigger OP 4.10.

14. **Involuntary Resettlement (OP/BP 4.12)**: There are four major interventions. Component 1 is aimed at developing: (i) new decision-support models for decision making; ii) a spatial digital library; iii) integrated sub-watershed assessment and planning focused on hydrological mapping, ground water planning and modeling, and ; iv) strengthening integrated micro-watershed master planning through effective linkages with agricultural development programs, including horticulture and agro-forestry as well as converging with NREGS. Component 2 relates to research, development and innovation and is aimed at developing important knowledge and tools for use in other components. Essentially, this involves applied research in integrated landscape management and agricultural intensification, climate smart agriculture, and agriculture value chains. Component 3 is aimed at enabling capacity support and capacity building which includes upgrading two of the existing Training Centers and strengthen internal Information Technology system for effective monitoring and evaluation. Component-4, horticulture intervention, focuses on establishing nutrition gardens on homesteads of, particularly, landless households and strengthening market linkages. None of the above activities entail acquisition of lands and therefore this policy need not be triggered.

V. ISSUES, RISKS AND MITIGATION MEASURES

Issues of significance for the project

15. Stakeholder consultations had thrown 5 key issues requiring attention. In this section, the same are elaborated in terms of social development elements. These issues need to be addressed during the course of the project cycle at an appropriate phase. Drawing on the findings of the social assessment and extensive consultations with the project officials and the World Bank's project team, relevant project approaches and mitigation measures to the identified issues are presented under the design elements section of this chapter.

- (i) ***Inclusion and Equity:*** One of the major challenges that the project needs to address is, how to include and equitably benefit the most marginalized sections of the communities, that is, the Scheduled Tribes, the Scheduled Castes, landless, women, small and marginal farmers living in the watershed villages.
- (ii) ***Cohesion:*** A challenge before the project is, how to ensure cohesiveness among various stakeholder groups and create an enabling environment for project implementation. For instance, there could be conflicts between small farmers and large farmers with respect to their selection under the proposed horticulture producer organizations, training and other capacity-building interventions and shade effect of plantation crops on neighboring plots.
- (iii) ***Participation:*** The big farmers usually dominate and actively participate in the community level activities. There could be negligible or passive participation of landless, small and marginal farmers and tribal communities.
- (iv) ***Convergence and Coordination:*** While a convergence across various development programs is essential for scaling up of the best practices, project design should ensure appropriate coordination among the different departments and other local self governments as well as communities.
- (v) ***Capacity Support and Capacity Building:*** Capacity of stakeholders to manage and execute programs at different levels (community, block, district and state level) of project operation is another important issue or challenge before the project. The capacity issues can be broadly categorized as capacity support issues and capacity building issues. The capacity of the community level groups and institutions need to be developed so that they themselves are able to take up various community level initiatives. On the other side, these community level stakeholders would require support from the project especially in terms of linking them with various government departments, establishing linkage with credit institutions, establishing market linkage, etc.
- (vi) ***Gender Issues:*** Women are one of the key constituencies who have large stake but limited influence and their inclusion in accessing opportunities and resources in general is critical for the project.
- (vii) ***Transparency and Accountability:*** In a rapidly changing socio-political situation in the state, importance of transparency and accountability need not be overstressed. The project's institutional and implementation arrangements should

be such as to ensure transparency at all levels.

Risks

16. Following are identified as key risks that the project needs to take due note of:

- There could be a lack of co-operation and coordination between Common Interest Groups of horticulture and that of the other watershed activities.
- The project may not be able to fully achieve its objectives if the interests of small and marginal horticulture farmers are not taken into account.
- District and Taluka level staff of the various agencies may not be comfortable with the new project design as it involves working with PRIs and local communities.
- Research & Development and other major investments may not fully take into cognizance social and environmental considerations.
- Research themes/activities could be decided by a few individuals who may not encompass the field level requirements in its totality.
- Nature and extent of adoption could vary substantially across the Horticulture functionaries resulting in substantial delays and discomfort among the local communities.
- Multiplicity of implementation partners leads to coordination problems and delays in implementation.
- Overburdening of the District and Taluk level staff with new programs and procedures
- The project may encounter difficulties in mobilizing marginal and small farmers if project interventions disproportionately benefit large farmers.
- The project may face opposition from the Panchayati Raj representatives and officials who are opposed to convergence between the project and the NREGA.

Mitigation Measures

17. The project design elements, its approach and mitigation measures attempt to address significant project issues. Drawing on the social assessment and consultations, this section puts together project approaches that address the issues identified.

18. This Social Assessment confirms the issues identified by the previous project – Participation, Inclusion and Equity. While participation runs through the project (both vertically and horizontally) as well as among different agencies and interest groups, inclusion and equity are essentially grassroots based. To be precise, it relates to differential access to project benefits; and the need to address the requirements of poor as well as socially disadvantaged vulnerable groups (women, SCs, STs). While, the Vulnerable Development Plan prepared and adopted during the previous project will continue to be the mainstay of participation and consultation framework, the same will be/ has been supplemented with the following:

(i) Inclusion and equity

- As a first step, project districts are chosen not merely based on agro-climatic parameters, but also backwardness, but also relative remoteness from urban centres and the presence of disadvantaged and marginalized groups. In fact, these districts

are categorized as “most backward” and “backward” by High-Powered Committee for Removal of Regional Imbalances headed by Dr D M Nanjundappa. They rank very low on Human Development Index (HDI) and Gender Development Index (GDI) (see chapter II of the comprehensive SA for details).

- Further, provision has been made for the establishment of several common interest groups (such as Watershed Committees, Horticulture Producers Associations etc) at the grassroots ensuring due representation of disadvantaged groups such as the Scheduled Castes and Schedule Tribe households.
- Nutrition Gardens, one of the key elements of horticulture component, will be predominantly targeted at landless and marginal farmer households.

(ii) Cohesion and stakeholder participation

- Cohesiveness related issues will be addressed by understanding the expectations and interests of each stakeholder groups. Mobilizing individuals and institutions for group action underpins the entire project intervention. It occurs at different levels - (i) at the grassroots (micro watershed) level, involving the local communities; (ii) at the intermediate (sub-watershed) level involving appropriate stakeholders including grassroots representatives; and (iii) at the apex (state) level involving all associated project management functionaries as well as individual experts and representatives of the farming as well as civil society. Several institutions will be established at different levels with an explicit composition and a definite mandate, which will include oversight responsibilities as well.
- Communities will be mobilized into group action which will include preparation of micro-plans adopting participatory approaches. This planning process will enable communities come together, exchange ideas, sort out differences, and develop a cohesive relation for further implementation. Decision making through participatory processes such as through Gram Sabha and other general body meetings of community-based organizations
- **Micro-watershed Committee:** In IWMP, there is one watershed committee for each GP. The watershed committee comprises the Adhyksha (President), four to five SHG representatives, five to six User Group (UG) representatives, and two or three GP representatives of that area. Of the above members, the committee will have not less than 50 percent members from women and weaker section representatives of Scheduled Castes and Scheduled Tribes. The committees are associated closely with participatory watershed planning, work implementation, extension, and participatory M&E. Accounts are the responsibility of the watershed committees. The various community based organizations such as SHGs, and UGs work in close tandem with the watershed committee.
- **Ryoatha Samparka Kendras (RSK/ Farmer Contact Centers):** These centers are at Hobli (cluster of villages within a Taluka) level under the jurisdiction of Agriculture Department. They are headed by the AO. The RSKs operationalize agriculture programs, for example technology transfer and extension and also cater to input supply (seeds, fertilizers, pesticides) along with farm mechanization programs. Under the current project, the RSK extension services will be strengthened to provide more

integrated watershed and agricultural services through new ICT and web-enabled information system kiosks, various training models, agri-weather forecasting systems, alternate cropping advice, etc.

(iii) Transparency and accountability

- The project operational structure will be flexible and engage stakeholders at all levels. Clear delineation of roles and responsibilities will be made at each level of operational structure. Arrangements will be made to ensure full and easy access to all the project information. NGOs and SHGs will be deployed to provide not only social intermediation services but also ensure social audit and accounting.
- Establishment of an MEL (Monitoring, Evaluation & Learning) system that provides timely and necessary information for achieving transparency and accountability. The project will set clear deliverables for each process and establish baseline status and set up output/process, outcome and impact indicators so that the progress against these can be monitored and measured periodically. The MEL system or framework for the project will serve as a tool for better management and decision-support, learning and accountability throughout the project period.

(iv) Decentralization (these elements also address the issues of equity and participation)

- The core objective of a decentralized governance mechanism is to adopt a need based implementation mechanism instead of opting for a top-down approach of implementing a project. Through this approach, the project will be designed and implemented based on exact requirements of people.
- Conducting social, environmental, hydrological and institutional assessments prior to implementation of the project using participatory tools with an aim to provide scope to stakeholders to assess and analyze their own problems and priorities and then suggest measures to address these.
- Conducting state and district level stakeholder consultation workshops to discuss the problems and priorities of people and take feedback from stakeholders on overall project planning and designing.
- In addition to the State level implementation arrangements - with the EPC (Empowered Project Committee) functioning as the overall governing body and the WDD as the lead implementing agency working with other project partners such as collaborating Departments (such as Horticulture), technical partners (such as Karnataka State Remote Sensing Application Centre) and NGOs – the *District Level Committee* (DLC), which is already in place for the IWMP will play a central role in administration of the project.
- The DLC will periodically review progress of planning, training and extension, and program convergence along with implementation of land treatment activities in the District. The DLC will be headed by the CEO of ZP with various line department district heads as members, and the DWDO as member Secretary. After the social approval of the watershed plans by the Gram-Sabha the DWDT will place the Micro-

Watershed Master Plan (also referred to as a Net Plan) and DPR before the DLC. The DLC will approve The Net Plans and DPRs.

(v) *Capacity building*

- The central focus of the project is on capacity building and institutional strengthening and providing backward and forward linkages and facilitating convergence through collaboration among a range of departments, institutions and agencies. Infact, the Bank's assistance is predominantly for software activities. The hardware or the investments including watershed treatment structures, income-generating activities and related interventions will be financed through IWMP and the NREGA.
- Stakeholder-specific capacity-building initiatives will be implemented covering: the personnel of the Horticulture Department and horticulture farmers. Common community level capacity-building initiatives can include: micro-plan preparation, formation of institutions and managing them - especially horticulture producer organizations – financial management in particular, technical skills to manage horticulture crops, inter-personal and negotiation skills to mobilize stakeholders and to educate and motivate them to make various contributions, and advocacy skills to demand services.

(vi) *Gender issues*

- Representation for women in the proposed horticulture producer companies/sanghas.
- Greater role for women in post-harvest activities such as processing and value addition.
- Adequate representation for women in HOPCOPS and their activities including their outlets.
- Training and other capacity-building initiatives for women/SHGs.
- Support or partner agencies to be appointed will deploy women staff.
- Where feasible women/SHGs will be allotted contracts resulting from sub-project implementation.
- Employment opportunities through horticulture strengthening activities.
- Women participation will be enhanced under the convergence with the NREGA.

(vii) *Convergence across departments and programmes*

- Convergence and integration are at the heart of the project design. The project will be partnering with other State agencies, aside from the GoK Ministry of Agriculture. Most important of these include Ministries of Mines and Geology, and the RDPRD (Rural Development & Panchayati Raj Department). For Mines and Geology the relationship will be mainly a technical one with regard to agreements on sharing of data and in discussions with regard to groundwater related policies. With RDPRD, the proposed project will be strengthening local governments and officers from District, Taluk and Gram Panchayat levels in terms of integrated local planning (with a focus on watersheds), with a view to increasing the efficient and effective use of public resources, especially the NREGA.

- Towards enabling convergence between IWMP and NREGA, Bank's Trust Fund resources has been made use of in the conduction of a Poverty and Social Impact Assessment of the NREGA program. This has not only explored the potential, but also developed several models for 'convergence'.
- The project will also partner closely with a range of research institutions and their programs, local or international, which have high relevance to project objectives and components.

(viii) Information Communication and Education (IEC):

One of the pre-requisites for the successful implementation of the project is providing all project-related information to stakeholders, particularly to the poor and vulnerable, to address information asymmetry among stakeholders and to create enabling environment for participation, transparency and equity. This should be done through modes and means that are accessible to stakeholders. For this, an IEC strategy will be developed and implemented through three core components:

- publicizing the project including the detailed rules of engagement to attract prospective partners. As this is probably the first ever attempt at such a large scale outreach program in watershed management, the project will equip itself appropriately for this; it will make efforts to dispel apprehensions on the part of potential project partners and to create an enabling environment for participation;
- undertaking an electronic as well as print media based campaign and establishing a platform for discussion, information exchange and dissemination; and
- establishing an information warehouse including digital library with easy accesses to off-the shelf as well as prospective technologies, knowledge, skills and management practices.

VI. MONITORING, EVALUATION AND LEARNING

19. Monitoring, Evaluation and Learning (MEL) system plays a critical role in successful implementation of projects. Independent third party support was critical to provide timely and critical recommendations, and technical analysis and planning support. However, with increasing scale and mainstreaming of successful processes, it is also central that primary government agencies begin to handle the core information flows in a more systematic manner. The KWDP II has a designed a comprehensive MEL system, which will:

- (i) provide a clear picture of the project, showing the logical link between inputs, activities, outputs, and the sequence of outcomes;
- (ii) outline an institutional/ governance structure for MEL and the roles and responsibilities of stakeholders involved;
- (iii) describe a strategy to track progress, measure outcomes, support the evaluation work, and enable continuous learning and improvement; and
- (iv) provide information regarding what the project aims to achieve, identifies the critical processes and indicators, and how it will measure and report on results.

20. Input-output monitoring will be supported by a web-enabled computerized MIS which will be an integral part of the MEL system, wherever necessary integrated into the overall WDD MIS systems. Support in this area will cover i) initial assessment of management information requirements and potential for ICT automation; ii) software development; iii) customization; iv) field testing and system rolling out; and v) sustained technical support for maintenance, including further adaptation and refinement. The following core elements would make up the MEL system:

- (i) Concurrent progress monitoring
- (ii) Process monitoring and pathway analysis
- (iii) Results monitoring
- (iv) Participatory monitoring and evaluation
- (v) Thematic studies and case studies
- (vi) Impact Evaluation
- (vii) Action learning, documentation and reflection

21. The following listing presents horticulture-related results indicators selected from the overall MEL framework of the project:

- (i) Increase in horticulture area for marginal and small farmer as well as SC/ST households
- (ii) Increase in household incomes specially for marginal and small farmer as well as SC/ST households
- (iii) Number of landless labor households endowed with nutrition garden.
- (iv) Common Interest Groups established and linked with HOPCOMs
- (v) Increase in the membership of HOPCOMs
- (vi) Number of women / women SHGs undergoing capacity building programs.
- (vii) Adoption of improved conservation practices and production technologies
- (viii) Improved knowledge of soil nutrient requirements for horticulture
- (ix) Improved technologies for processing and value chain improvements in selected horticulture crops
- (x) Improved information for farmers on climate change and risk management
- (xi) Improved capacity of farmer contact centers/RSKs

22. The above indicators will be measured at appropriate intervals such as baseline, yearly, mid-term and end-of-project. In addition to the WDD, a range of other agencies will be involved in the MEL system - involving data collection and measurement of the impact through above indicators – such as HD, M&E agency, AD, research agencies, KVKs, third party study agencies and NBSSLUP.

Annexure : Timeline – Horticulture Evolution

MILESTONE	DESCRIPTION
1966	First government nursery was opened in Davanagere
Early 1970s	Severe drought in most parts of Karnataka
1980	First government nursery was set up in Gulbarga
Early 1980s	Most villages were electrified
1987-88	First modern mango plantation was raised in Davanagere
1990	Areca nut growers' association was formed in Davanagere
Early 1990s	Horticulture Department started playing active and effective role
Early 1990s	Major milestone for horticulture thanks to a combination of factors; horticulture took off in both districts and started gaining upward trajectory
Early 1990s	Widespread installation of borewells
Early 1990s	Infrastructure and connectivity started improving facilitating the growth of horticulture
Early 1990s	Farmers started attending training programmes, exposure visits and other capacity building and extension interventions.
1991-92	Commercial varieties of pomegranate were introduced
1994-95	Papaya was introduced in Gulbarga
1994-95	Contract farming was introduced in the districts
1995-96	Farmers started growing commercial horticulture crops

1996-97	Oil palm was introduced
1996-97	Farmers started using drip irrigation and sprinkler systems
1997-98	Widespread mite attack in coconut
2000	HOPCOMS was set up in Gulbarga
2004-05	First cold storage under private sector was set up in Gulbarga
2005-06	Severe outbreak of Bacterial wilt in pomegranate decimating the crop in the districts.
Late 2000s	National Horticulture Mission (NHM) took off in the districts.
2008	First private nursery was set up in Davanagere
2008-09	Pomegranate was reintroduced
2010	Plant Health Clinic and Horticulture clinic were established in the districts.
2011-12	<i>Suvarna Bhoomi</i> scheme was launched by GoK for promoting smallholder horticulture targeting small and marginal farmers and SCs and STs.