

## A CASE STUDY ON LIVELIHOODS PROMOTION THROUGH WATERSHED DEVELOPMENT IN AHMEDNAGAR, MAHARASHTRA<sup>1</sup>

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### I. INTRODUCTION

Watershed Organisation Trust (WOTR) is an NGO headquartered in Ahmednagar. It was initiated and registered as an NGO by Fr. Bacher and Crispino Lobo on December 20, 1993 to fill the vacuum of a support agency for IGWDP<sup>2</sup>. Soon WOTR realised that in the absence of direct intervention experience it could become increasingly isolated from field realities and might be viewed as a dated or untested support agency. Thus, in 1996, it also started implementing IGWDP in the backward tribal areas of Maharashtra. WOTR initially believed that watershed development in itself was an effective tool for poverty alleviation which can indirectly impact other aspects of the development process. Two key developments in the mid-nineties, however, prompted WOTR to undertake a comprehensive livelihood study of its completed and ongoing watershed programmes. These developments were:

- ✚ A paradigm shift in the outlook of donor agencies in the country, from viewing watershed development programmes in isolation, to promoting integrated watershed development with a focus on improved livelihoods
- ✚ Field level implementation experiences of WOTR as well as that of its partner NGOs. Besides that, suggesting the need to explore options and opportunities beyond the conventional watershed programme framework, in order to enhance the extent, level, and quality of impact of their interventions on the livelihoods of watershed communities.

The findings of the WOTR study confirmed the need for the organisation to incorporate a distinct livelihood component in the ongoing as well as future programmes to enhance and sustain their developmental impacts. The present study, conducted in March 2006, captures the process of this conscious integration of livelihoods component within the model framework of IGWDP and attempts to assess how this enabled WOTR to enhance programme impacts in its project areas.

### II. METHODOLOGY

The study adopted the methodology of case study research of the integrated watershed project implemented by WOTR in Vaiju Babhulgaon (VBgaon) during 1998 to 2002 as part

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<sup>1</sup> The study forms an integral part of the knowledge creation process initiated by the Hyderabad-based Indian School of Livelihoods Promotion (ISLP). This Case is expected to provide useful insights and inputs for the curriculum development exercise embarked upon by ISLP to design a course on *Livelihoods Promotion through Watershed Development*.

<sup>2</sup>IGWDP was conceptualised as a programme for developing watersheds to alleviate acute poverty in the rainfed rural areas of Maharashtra

of IGWDP. The study drew upon the Livelihood Framework developed by Basix to understand the watershed intervention from the livelihoods perspective. The Case Study Protocol developed by the Livelihood School was used as a guide for developing various primary and secondary data collection instruments for the research, and for analysis.

Primary data collection was done at VBgaon, using several instruments such as:

- (i) Checklist for interviewing individual beneficiaries of WOTR's watershed programme (Annexure 2)
- (ii) Checklist for interviewing SHG members (Annexure 3) and
- (iii) Format for data collection on enterprise caselets (Annexure 4).

Each of these instruments was administered on-site by the case writer herself in a relaxed manner, to facilitate in-depth discussion. Twelve individual beneficiaries and ten SHG women were engaged in discussions over three days of the field visit to VBgaon. Apart from rural community, the field and programme staff of WOTR was also interviewed to throw light on different aspects of watershed based livelihood intervention in VBgaon.

Secondary data in the form of CD and printed documentation on VBgaon and its watershed programme, IGWDP guidelines and other organisational reports were accessed from WOTR, to provide chronological information for setting the case context and supply details of WOTR's intervention in VBgaon. The entire field work for this study was completed within a period of three days, between 14 to 16 February 2006.

### III. VAIJU BABHULGAON: A TYPICAL DROUGHT-PRONE VILLAGE

Vaiju Babhulgaon is located in Ahmednagar District of Maharashtra. The district lies partly in the upper hilly portion of Sahyadri. It forms a major portion of the Deccan Plateau with the North Eastern slope and the river basins of Godavari and Dhore on either side of the plateau. The whole District is an elevated tableland with a number of plateaus within it at various levels and thus falls in a chronic scarcity zone. It's marred by recurring and acute shortage of food and fodder once in 3-8 years. Being in the semi-arid zone, it also receives an unreliable rainfall of about 500mm.

Vaiju Babhulgaon experiences persistent droughts. Rainfall pattern of the last 15 years in Vaiju Babhulgaon presents a picture of uncertainty accentuated by wide fluctuations in the amount of rainfall received by the area in various years (Table 3).

**Table 3: Mean Annual Rainfall received by VBgaon Watershed since 1990**

Year	Rainfall (in mm)	Year	Rainfall (in mm)
1990-91	320.00	1998-99	750.00
1991-92	485.00	1999-2000	517.80
1992-93	434.50	2000-01	483.00
1993-94	331.00	2001-02	245.75
1994-95	571.60	2002-03	290.08
1995-96	533.00	2003-04	155.92
1996-97	432.00	2004-05	842.00
1997-98	448.00		

VBgaon consists of 247 households having a total population of 1272 (672 males and 600 females). Marathas constitute 88% of the village population and SC and ST constitute 6.5% and 2.0% respectively. Table 1 below gives the household caste distribution in VBgaon.

**Table 1: Caste Composition of VBgaon**

S. No.	Caste / Community	No. of Households
1.	Brahmin	2
2.	<i>Ghisadi</i> (nomad)	1
3.	Harijan	10
4.	<i>Kumhar</i>	5
5.	<i>Maang</i>	5
6.	Maratha	218
7.	Muslim	2
8.	<i>Naai</i>	1
9.	<i>Sambhar / Chamaar</i>	1
10.	<i>Sutaar</i>	2
<b>Total</b>		<b>247</b>

Source: WOTR's records

Marathas dominate the village proceedings because of their numerical strength and control over the resource. However, households of the remaining caste groups have well developed intra- and inter-caste network both within and outside VBgaon which contributes to their socio-economic strength. Barring a few exceptions, households belonging to various occupational caste groups (like *Naai* and *Kumhar*) are continuing with their traditional profession. Nevertheless, they're also making forays into farming and cattle rearing to make both ends meet. The village was, prior to WOTR's intervention, not only socially fragmented with no community-based intervention or decision ever being taken, the political leanings of the households also diverged to a great extent.

Rainfed agriculture and livestock rearing are the main occupations of community in VBgaon. The use of motors for water extraction and distribution is restrained by the undependable electricity supply. Prior to WOTR's intervention, Bajra and sunflower were the main crops grown by small and marginal farmers, while medium and large farmers having a private source of irrigation also cultivated cotton and wheat. Frequent failure of wells deterred farmers in the village from investing in dug- or bore wells. Fodder shortage during the dry months was a norm, preventing people from increasing and/or improving their cattle herd, though they longed to make forays into animal husbandry for additional income generation.

Some of the big farmers of VBgaon own tractors and trolleys that are hired (along with those owned by people in nearby Karanje) to transport agricultural produce and cattle to as far as Ahmednagar market. Small and marginal farmers as well as landless households also engage in wage labour – both agricultural and non-agricultural - within the village as well as in the neighbouring villages and towns. Earlier, the wages for women varied from Rs.25/ to 30/ per day. It was lower than that the wages paid to men which ranged from Rs.35/ to 50/ per day depending on the nature of the work).

Water scarcity and the consequent droughts in the pre-intervention times were inevitably followed by migration of hundreds of households of VBgaon to distant villages and towns

in search of labour and income generation activities. The most common labour opportunities which make the local community of VBgaon migrate have been listed in Table 2.

**Table 2: Migration Pattern of Community in VBgaon**

Labour opportunity	Place	Who migrates?	Wages	When is the Labour Opportunity Available?
Loading and unloading of river sand	Paithan and Ahmednagar	Men	@ Rs. 120-150 / day	Wednesday to Monday (all seasons except in monsoon)
Factory labour in sugar mills	Shrampur, Latur, Belapur, Bhenda, Pethar	Couples	Rs. 10000 / couple (consolidated sum) + food & lodging	Fixed period of 4 months / year: February to May
Agricultural labour	Baghur & other villages in neighbouring <i>tehsils</i>	Couples	@ Rs. 50-60 / day to men & @ Rs. 35-40 / day to women	Fixed period of 4 months / year: February to May

**Source:** Primary data

In order to reduce the need for cash transactions exchanging labour for cash is a common practice and so is the preference to barter products and services within the village. Households prefer to meet their needs for goods and services - whenever available – from shops and suppliers in or near the village. It saves their time and transaction cost and also ensures quality of the acquired product/service besides increasing accountability of the service provider. Such local arrangements help the cash-starved households.

The scarcity of cash is evident from the fact that households in VBgaon borrow money on credit from both institutional and private sources available within and outside the village. Purpose of loan, extent of urgency and amount required are the key criteria (besides, of course, access to credit sources) in deciding from where a household will borrow in a particular situation. Relatives are a highly dependable source of borrowing, especially for agri-investment while money lenders and Bhishi are the other alternative. A few landowners have taken loans from Bank and several others from the Credit Cooperative for crops, purchase of cattle and tractors.

Fortunately, the adverse climatic condition has not led VBgaon into physical isolation. It is connected with District Headquarter in Ahmednagar by a well-maintained *pucca* road and to the neighbouring villages by a combination of *pucca (tarred)* and *kutchra (untarred)* roads. The road networks also connect it to other places that serve as hubs of economic activity in the following areas:

- ✚ Karanjee (nearest township market for both consumption and production goods)
- ✚ Ghodegaon (the weekly cattle market)
- ✚ Paithan (township offering diverse non-farm labour opportunities) and
- ✚ Pathardi (Block Headquarter which also has the Panchayat Samiti office)

A private bus service also operates between VBgaon and Ahmednagar (in the West), Ghodegaon (in the North), and Pathardi (in the East). The community in neighbouring

villages depends on VBgaon to meet its needs for various products (e.g., grains and packaged food items like biscuits, earthen pots, seeds and fertilisers, etc.) and services (like tailoring).

#### IV. NATURE AND DESIGN OF THE INTERVENTION

When WOTR initiated Capacity Building Phase (CBP) of IGWDP in VBgaon in January 1995, it was still a support agency. But by the time of the Full Scale Implementation Phase (FIP) of watershed project in VBgaon (1998-2002) WOTR, had established itself as a implementation-cum-support agency. Within the organisation, specialised competency cells for technical training, women's development and communication and documentation had been initiated. WOTR had also established Regional Resource Centres (RRC) in different regions of the State(s), very early in its work. The agency's work in VBgaon received resource support from the Ahmednagar RRC. Financial support for CBP was mobilized through the intervention of German Agency for Technical Co-operation (GTZ) and German Development Bank (KfW) and for FIP through the National Bank for Agriculture and Rural Development (NABARD). The policy support to development initiatives was assured through supportive resolutions of the Government of Maharashtra, State Departments of Forest, Soil and Water Conservation<sup>3</sup>.

In VBgaon, WOTR focussed on organising self-help efforts for poverty alleviation through environmental regeneration along watershed lines. The total land area of the VBgaon watershed is 1239.84 ha. The distribution between public and private lands is as follows:

Public land		Private land	
Government forestland	Revenue land	Uncultivable wasteland	Arable land
430.87 ha	27.22 ha	23.48 ha	758.27 ha

Prior to WOTR intervention forests in the area were degraded and had a scanty cover of grass and shrubs, insufficient to support the existing cattle population in VBgaon. Soil depth in the area ranges from 7.5 to 45 cm. Soil texture is mainly sandy clay loam. Beneath the soil layer is a layer of hard *murum* having low infiltration and water holding capacity.

WOTR aimed to impact the following dimensions of livelihoods in VBgaon:

- ✚ Reduce **vulnerability** of the communities to monsoon failure and the consequent drought leading to shortage of water for drinking as well as irrigation
- ✚ Increase predictability (or reducing the **risk**) associated with farming, to allow farming households plan their cropping patterns
- ✚ Impact **health** by ensuring round-the-year availability of drinking water in the area
- ✚ Favourably impact household **incomes** to stop distress, seasonal migration
- ✚ Enhance the **skills** and **capacities** of the households to generate income from both land-based and off-land activities.

##### a. Components of Livelihood Promotion Strategy

<sup>3</sup> These different institutional arrangements will be detailed in a subsequent section of this report.

<sup>5</sup> These technologies were evolved during the course of WOTR's IGWDP interventions in the watersheds of other villages, Districts and States of the country, and thus, were based on experiential learning of the organization.

The strategy of livelihoods promotion it adopted was based not on any single activity but through a series of diverse interventions integrated within the model framework of IGWDP. The concrete activities and exact mix and volume of inputs provided by WOTR were determined by the findings of a baseline study of the watershed conducted by it during the CBP. The main sub-strategies through which these activities were implemented were:

- ✚ Augmenting natural resources (NRs)
- ✚ Organising the community into local institutions
- ✚ Creation of inter-agency linkages and
- ✚ Partnerships with multiple agencies

(i) ***Augmentation of Natural Resources in the Watershed***

WOTR directed its efforts at increasing rainwater harvesting and percolation to improve ground water recharge and augment existing water supplies in order to meet the community's requirements of water for drinking and irrigation. Fodder production for local cattle and ensuring indirect monetary and food security gains through increased agriculture and horticulture production from private lands were the other secondary thrust areas.

WOTR followed the ridge-to-valley approach for watershed treatment. It proceeded smoothly with minimal disputes between upstream and downstream households because a major proportion of the ridge comprising of around 430 ha was government forestland used for cattle grazing and meeting household level small timber needs by the community. WOTR at the outset involved the community in treating this forestland located on the slopes. Prioritizing community's drinking water requirements further reduced chances of conflict between ridge v/s valley and/or landed v/s landless households.

On private lands watershed treatment included soil and water conservation works (mainly, the construction of farm bunds, contour bunds, and stone outlets). These works were undertaken through the landowners by creating additional sources of water for consumption and productive usage. Development of agro-horticultural plots was another work which included fruit-bearing trees like pomegranate and orange and green fodder for cattle besides treatment of drainage line (e.g., loose boulder structures, check dams, nala bunds, etc.). On the public forest lands, in addition to soil and conservation works, afforestation (of local, timber-yielding and Nitrogen fixing species) and grass seeding for slope stabilisation and improved fodder production was done. Table 5 below gives details of soil and water conservation measures.

**Table 5: Soil and Water Conservation Measures Undertaken under IGWDP**

Land Use	Treatment	Units (nos.) / Area Treated (in ha)	Cost Incurred (in Rs.)
<b>A. Area Treatments</b>			
1. Crop Cultivation	FB/CB/SO	421.57	14 38 828.81
2. Agri-horticulture	CCT/FB/Pits/Plantation	59.30	4 05 381.00
3. Afforestation	CCT/RCT/WAT/GP & Plantation	87.88	9 76 651.84
<b>B. Drainage Line Treatment</b>			
1. Loose Boulder Structure		51	55 625.43
2. Check Weir		11	3 63 067.78
3. Check Dam		3	7 07 755.78
4. Nala Bund		4	2 76 730.70
5. Gabion Structure		3	45 351.19

6. Nala Bund Repairing	7	1 63 801.10
<b>Totals</b>	<b>568.75 ha &amp; 79 structures</b>	<b>46 14 004.66</b>

**Notes:** FB/CB = Farm Bund/Contour Bund; CCT = Continuous Contour Trenches; SO = Stone Outlet; RCT = Refilled Contour Trenches; WAT = Water Absorption Trench; GP = Gully Plug  
**Source:** WOTR Records

WOTR bore the entire cost (of Rs. 46 14 004.66) for constructing various physical structures along the drainage line and on private and public areas and provided saplings and other planting material (totalling 23 720 plants) free of cost to the farmers interested in taking up dryland horticulture. However, individual enterprise-specific costs (including the cost of digging wells to gain from improved groundwater recharge), and the duties of managing, developing, and sustaining the enterprise were the responsibility of the respective owners. The village community's contribution of voluntary labour (*shramdaan*) was to the tune of Rs. 694, 858/- it was deposited in the VWC's account to plan for and create new community assets as per need, and also to repair and maintain the physical assets created in VBgaon under IGWDP.

(ii) ***Community Organisation into Local Institutions***

WOTR mobilised and sensitised the village community in VBgaon about the significance and components of watershed based development during the Capacity Building Phase (CBP) of IGWDP from January 1995 to May 1998. The whole community in VBgaon was involved in the process of creating much of the physical infrastructure, not only working as hired labour, but also contributing with WOTR to the planning for spatial alignment of various structures. Mandatory 'voluntary' contribution of labour' (*shramdaan*) - in excess of 20% of the actual cost of construction - was further intended to create a sense of ownership among the VBgaon community for those structures.

A Village Watershed Committee (VWC) comprising of 15 members representing different constituent caste groups of the village was elected by consensual nomination to manage the project at the field level. The VWC was formed and given a primary role to ensure local ownership in keeping with WOTR's ideology to promote self help and facilitate local empowerment. It served as the main implementation and management agency and was responsible for the maintenance of the physical infrastructure during Full Implementation Phase (FIP), and in the post-FIP period as well. In order to provide the VWC recognition and rights as a legal entity, it was registered under the Society's Registration Act, and its members assigned different portfolios as per their capacities and capabilities. WOTR designed and implemented a simple, capacity building programme, the Participatory Operational Pedagogy (Box 2).

## Box 2

### POP and GO-POP: Pedagogical Innovations of WOTR

**Participatory Operational Pedagogy (POP):** It is a step-by-step, learning-by-doing approach aimed at building the capacities of NGOs and village level institutions (including VWCs and SHGs). The POP approach was based on WOTR's several years' of experience of building watershed development programmes on the commitment, involvement, and willingness of the end-users. Recognising these end users as the primary stakeholders in watershed development process, POP included pathways aimed at gradually building up their participation in all phases of project planning, implementation, and post-project management.

**Gender-Oriented Participatory Operational Pedagogy (GO-POP):** A gender-oriented variant of POP, GO-POP was developed by Marcella D'Souza – the present Director of WOTR - as an approach to integrate women in planning and implementation of watershed development programmes, in a step-by-step and innocuous manner to avoid confrontations. This pedagogy was evolved and continuously adopted as part of WOTR's commitment to increase among the watershed community, acceptance of women as equal partners in the development process. Adopting GO-POP involved incorporating women's perspectives, priorities, needs, and inputs in project measures, and promoting active discussion on these aspects as per the following cardinal principles:

- ✚ Making women's promotion inclusive, partnership-based, solidarity-focussed, and non-conflicting
- ✚ Addressing women's concerns within their social and institutional milieu
- ✚ Involving men actively in the process of women's empowerment and
- ✚ Promoting SHGs of women to develop bonds of solidarity and fellowship to overcome opposition jointly and sustain the change process.

**Source:** WOTR (2005).

WOTR provided technical and managerial inputs by organising need-based training and exposure visits to equip the community to ensure effective participation in the implementation and ownership of the outcomes. Apart from transferring the skills and capacities associated with existing technologies in watershed development, viz. contour and farm bunding, gully plugs, loose boulder structures, grass seeding, and agroforestry promotion, two new technologies were also introduced in VBgaon. The first one was pertaining to Net Area (based) Planning while the second to Refilled Contour Trenches (RCTs)<sup>5</sup>. Whereas the former allowed for site or farm-specific design of physical interventions in the watershed, the latter improved the survival of trees planted on the slopes, thus, leading to better binding of soil and reclamation of slopes. Such hand-holding and guidance to the community also continued through the FIP.

WOTR consciously planned to integrate gender into the watershed programme and to empower women as a focus group to undertake livelihoods improvement. It thus developed and operationalised the Gender-Oriented Participatory Operation Pedagogy (GO-POP), that allowed step-by-step integration and capacity building of village women without adopting a confrontational attitude and organised Self Help Groups (SHGs) of women.

The SHGs were based on geographical and social proximity of households. The six SHGs were federated into a village level Samyukt Mahila Samiti (SMS); two women members of each SHG were nominated to the SMS. WOTR provided a revolving fund of Rs. 2,75,000

(as grant) to the SMS to increase the volume of funds available for circulation among the needy, SHG members. The savings and credit activities initiated by women's SHGs were intended to enable local women to invest in the development of drinking water resources, fund the education of their children and establish farm-based and non-farm enterprises.

Capacity building, a core strategy of WOTR for VWC, also played a key role in improvement in the functioning and management of SHGs and the SMS. WOTR organised training programmes in SHG promotion and SHG and SMS management. SHG and SMS members were trained in micro-lending, accounts keeping, and in establishing and maintaining other systems and processes for group accompaniment. Guidance was also provided to the willing women members for choosing and establishing farm-allied and non-farm enterprises for additional income generation.

The financial sustainability of the local institutions created was also given due attention as is evident from the funds made available to the VWC and to SMS. Yet another institution in VBgaon, the FPC, retained ownership of fodder, small timber, and fruits obtained from the regenerated forestlands as per the JFM circular of the Government of Maharashtra.

*(iii) Creation of Inter-Agency Linkages*

According to WOTR, before FIP local elected representatives and self-Government bodies, SHGs, VWC, SMS, Co-operatives, Banks, Government Departments, and WOTR along with the community in VBgaon, arrived at a mutually agreed plan for smooth implementation of various activities in the area. Under this so-called **Sangamner Pattern** of planning and implementation, the roles and responsibilities of various actors and stakeholders were clearly outlined beforehand, in order to ensure both support and compliance by all partners. Through this conscious and planned integration of multiple agencies in the watershed programme, WOTR attempted to increase their stakes and ownership in the programme, fixed responsibilities and ensure that the local community - through VWC - became linked to various Governmental schemes and programmes for future too. During the CBP itself, WOTR entered into an agreement with the State Forest Department, under which it was decided to treat and manage 36 ha of forestland through the VBgaon VWC, while the Department received IGWDP funds to treat on its own the remaining forestland included in the watershed.

*(iv) Partnerships with Multiple Agencies*

As in other IGWDP watersheds, WDP in VBgaon also involved multiple agencies - external as well as internal - working together to achieve the immediate and long term objectives of the project. As far as the enterprises promoted through IGWDP in VBgaon are concerned, the various parties and partners involved can be divided into two kinds. They're agencies providing programmatic, technical, and policy level support (such WOTR, NABARD, donors, and the government (with its various line departments) and institutions involved in operationalising watershed-based livelihoods promotion activities at the field level (such as VWC, SHGs, and SMS, and WOTR). However, it is to be noted that there was some functional overlap in the aforesaid two kinds of agencies.

In order to co-ordinate and manage the interventions effectively, both on and off the field, roles and responsibilities of various agencies were clearly defined, printed, and circulated to the relevant stakeholders in the form of a booklet entitled '*Guidelines on Participation in Indo-German Watershed Development Programme*', published by NABARD (u.d.). The

booklet also specified programme objectives, perspectives, approach, as well as the policy guidelines and circulars issued by various arms of the government to facilitate IGWDP's interventions. The Programme Co-ordinator – a representative of WOTR – constituted the link between programmatic and project actors of IGWDP.

At the field level in VBgaon, the stakeholders were sensitised and trained by WOTR regarding their rights and responsibilities under WDP. Key local institutions – VWC, FPC, SHGs, and MMS – linked the community to WOTR. The VWC members were assigned various responsibilities depending on their capacities and capabilities. Apart from communication channels, pathways for resource flow were also clearly defined, as follows:

- ✚ Funds for physical works flowed from NABARD to the joint account of VWC and WOTR, held in a local Bank. The Committee paid wages to the labour while retaining the amount equivalent to the voluntary contribution.
- ✚ The SMS received revolving fund from WOTR (from the CBP funds), and lent it to the SHGs, which in turn lent smaller amounts to the SHG members.
- ✚ All investments in capacity building – mobilising, sensitizing, organising, and training – of the community were borne by WOTR out of CBP funds it received from GTZ.

#### b. **Target Population of Interventions**

Natural resource management as well as enterprise development interventions of WOTR in VBgaon were designed to bring about changes in the livelihoods of the community as a whole, since ensuring a dependable supply of water (for consumptive and productive uses) was the immediate thrust of WDP in the area. However, promotion of individual business (farm and non farm) enterprises was also planned to particularly and directly benefit:

- ✚ Small and marginal farmers with agricultural lands near the ridge portion of the watershed;
- ✚ Women (and through them their households) who are normally excluded from benefiting directly from land-development activities carried out in a conventional WDP.

Indirectly but intentionally, WOTR also planned to target the landless labour by providing them increased opportunities to work at the physical work sites – both public and private – during the FIP of IGWDP in VBgaon.

## V. **IMPACT**

WOTR's watershed-based interventions were directed at influencing multiple facets of livelihoods in VBgaon. The livelihood impact achieved from its three kinds of interventions, viz. augmentation of natural resources, local institutional development, and creation of inter-agency linkages, is the focus of discussion in this Section.

#### (a) **Impact of Natural Resource Development on Livelihood Augmentation**

Soil and water conservation works carried out on both public and private lands increased the cultivable area in VBgaon by 43 ha. As the probability of wells becoming a success increased, seven new wells came up in the village during the IGDWP tenure. About 115 existing wells in the watershed experienced 100% increase in water table, thus, benefiting more than 200 households in the village. Irrigated area in the village increased by 45 ha, which included 30 ha of the erstwhile rainfed area diverted for irrigated vegetable crop cultivation by around 40 farmer households. It is important to note that most of these agricultural lands lay in the upper portion of the watershed, owned by small and marginal

farmers. Availability of water for drinking as well as irrigation increased in terms of quantity as well as temporal spread. For example, even scanty rains of 2005-06 were tapped to the maximum to ensure availability of drinking water till March 2006, though Rabi crops suffered.

Dryland horticulture promoted and supported by WOTR on fallow private plots resulted in productive utilisation of available land resource, while increasing the scope of perennial returns in the form of fruits and vegetables, to more than 35 owner households. However, a medium farmer who tried selling pomegranates from his horticultural plot the last year found that there was no local demand for the fruit. With farmers from several villages in the area rushing to plant pomegranate trees on their drier plots, traders in Ahmednagar managed to keep procurement prices low. As a result, the farmers from VBgaon received only Rs. 2 a piece instead of Rs. 5 that they expected the fruits to fetch, in 2005.

Grass and leguminous trees were planted under IGWDP on 36 ha forest area on the slopes, with the active involvement of VBgaon's JFM committee. This increased the self-sufficiency of local community in fodder production. An additional 1.5 tonnes of green fodder produced from irrigated croplands in the watershed met the increased demand for fodder from close to 30 households that chose to increase the size and quality of their milch cattle stock with loans from SHGs.

The boost provided to agriculture in the form of expansion as well as intensification increased agricultural employment for around 50 households in VBgaon from two months in a year in the pre-intervention times to eight months following WOTR's intervention. Migration of wage labour during 2003-04 reduced from a pre-intervention figure of 60 migrating households to 10. With greater labour opportunities becoming locally available for the landless as well as small and marginal farmers, agricultural wages in and out of the village jumped from Rs. 25 to a minimum of Rs. 45, for both men and women, during IGWDP tenure. Increased labour earnings played a key role in one household of VBgaon dreaming of and managing to graduate from being landless to being the proud owner of 6 acres land. Land ownership also made its owner eligible for the membership of and thus, production credit from a local agricultural credit co-operative.

The beneficial impact of the various components of the intervention on productive activities and incomes can be seen in the seasonal spread of these diverse livelihood activities in VBgaon. Figure 2 depicts this.

The sustainability of gains from the physical infrastructure developed under IGWDP in VBgaon – including 79 drainage line structures, 568.75 ha of treated area and 23,720 plants in 59.3 ha agro-horticultural plots – can be ensured in the future as well, provided it is maintained well by the VDC, using funds and social capital contributed under the intervention.



## **(b) Impact of Institutional Development**

### ***(i) Social Capital***

The community mobilization and capacity building led to the formation of community bodies transformed the hitherto fragmented village community into an interconnected interdependent collaborative network of the VWC, six SHGs and an SMS. Trained and capacitated by WOTR, these institutions succeeded in performing pre-determined functions based on the notion of self-help. The VWC, for example, implemented various watershed development works worth Rs. 46 lakh successfully in the village. The nurturing and development of the VWC as the main field implementation agency of IGWDP in VBgaon, achieved the objective of the village community owning the process – its failures and successes – and local capacities to manage own development process also increased continuously. Registration of the VWC as a society gave the institution an independent and legal identity, and further divested the control and responsibility of field interventions of IGWDP to the hands of the watershed community. A concrete indicator of the enormous impact of these empowering processes is the selection of the VWC of VBgaon to serve as a resource agency for the VWC in Damalwadi, where a new WDP is being implemented by WOTR; a substantial added benefit is that VBgaon's WDP will also earn 16% of the CBP costs of Damalwadi WDP from the latter's committee as 'consultancy fee'.

The VWC is seen to use the financial resources at its disposal judiciously for the livelihood needs of villagers. Of the total of Rs. 5 lakh in the Watershed Maintenance Fund (given by WOTR as per IGWDP guidelines to ensure the maintenance of physical structures created under the project) the VWC has deposited Rs. 4 lakh as a Fixed Deposit in the Bank, while the remaining amount is being invested for village development and maintenance activities. For example, in 2005, VBgaon used Rs. 50,000 from the fund for organising a cattle camp to mitigate drought-induced fodder scarcity in the village; this amount was later reimbursed by the Government of Maharashtra. Similarly, an amount of Rs. 25,000 was advanced (as loan) to farmers for installing drip irrigation in horticulture plots.

The interventions attempt to address the issue of Maratha dominance in VBgaon by making the VWC representative of caste composition in the village has had limited success. The ridge to valley approach to drainage line and area treatment in the watershed ensured that caste did not become a determining factor in deciding the sequence of interventions or flow of benefits and the system of compulsory 20% *shramdaan* from the entire community and its implementation first on the lands of small and marginal farmers ensured that the middle and large farmers (many with lands in the valley area) also contributed labour and 'owned' the programme of village development.

However, there seems to be some unease among some non-Marathas about the Maratha dominance. Members of a few households in the village were dissatisfied because of the following:

- ✚ No elections of the VWC in VBgaon have ever taken place since it was first-constituted in 1997-98
- ✚ Though the VWC boasts of representatives of all castes in the village, 6-7 members of the core committee control the group and its funds, and make all the decisions
- ✚ The President of VWC – a Maratha – owns land in the village, but resides in Ahmednagar town. As such, they felt, his concern about the community starts and ends with the VWC

Landless households in VBgaon are not only outnumbered by the landed; the former have always been forced to pay ‘voluntary’ contribution for labour works, despite IGWDP’s guidelines stating the contrary.

The strain in community relations is also evident from differing interpretations of the unanimous election for the past three years of candidates for the offices of various representative institutions in the village – agricultural co-operative, VWC, and SMS. This, according to the Maratha respondents, is because people in VBgaon became united post-IGWDP implementation, leading to a convergence of their party / person preferences even for Gram Panchayat elections. However, households of other castes and non-members of the VWC found this interpretation misplaced and simplistic, and stressed that individual preferences manifested wherever and whenever the system allowed space. Though no voice of dissent or dissatisfaction with the Panchayat appointee was raised in field, the nomination of VWC office bearers (particularly for the Presidential position) and lack of elections ever since the committee was first constituted in 1999 was a cause of concern and dissatisfaction. Hence, the non-members of the VWC claim that elections for the next VWC – whenever they take place - will not be unanimous.

Also the study revealed that while WOTR has been largely successful in ensuring equity among the differentially landed, there is suppressed discontent among landless households, as well as a few large farmers who own lands in the valley portion of watershed.

#### ***(ii) Women’s Empowerment***

The thrust in WOTR’s intervention on women’s empowerment has vis-à-vis livelihood promotion and participation in watershed programs and other activities in the public space have been successful. The formation of six SHGs involving 108 women from geographically widely distributed households ensured spatial equity in the representation and mobilisation of women, often belonging to different caste groups. The federation of these into SMS provided a further boost to the entrepreneurial potential of womenfolk by providing both mental and financial assistance to willing individuals.

When IGWDP technically wound up in May 2002, these groups had total savings of Rs. 1,34,595 in their Bank accounts and six loans amounting to Rs. 6,63,050 had been disbursed to the SHGs for productive use using the revolving fund contributed under IGWDP to the SMS. Of these, five loans had been repaid fully at the time of this study (Table 6). More than 12 women-headed enterprises (e.g., grocery shops, tailoring, dry fish trading, dairy, and vending bangles) were established within the village with credit support from SHGs and SMS, each increasing women’s individual incomes by 60 to 100%.

**Table 6: Loan Disbursement by the SMS to VBgaon SHGs (as in May 2002)**

S. No.	Loan Amount Disbursed (in Rs.)	Year	SHGs Involved	No. of Active Borrowers	Purpose of Loans
1	43 000	Nov 1999	3	6	IGA <sup>7</sup> & agriculture
2	1 22 850	June 2000	10	91	Agriculture
3	16 200	August 2000	2	4	Agriculture
4	1 10 000	March 2001	4	9	IGA & agriculture

<sup>7</sup> IGA = Income Generation Activities (apart from agriculture)

5	95 000	May 2001	9	28	IGA & agriculture
6	2 76 000	April 2003	5	31	IGA & agriculture
<b>Total</b>	<b>6 63 050</b>			<b>169</b>	

The benefits of participation, capacity building and entrepreneurship development go well beyond the increased incomes; women entrepreneurs asserted that now they felt increasingly confident in interacting and dealing with the male-dominated Panchayats of their own and other villages, with outsiders (like the researcher), WOTR's officials, field workers, and foreign visitors, as well as traders in the marketplace. Women's increased self-confidence and capacities are seen from the fact that women's groups have come forward to undertake various social development activities as well, like organising health camps, developing kitchen gardens with bucket kits, adopting smokeless *chulhas* and gas cylinders, etc., apart from contributing to the village level discourse, discussions, and action related to watershed-based development and women's empowerment. The meeting hall constructed under IGWDP in VBgaon has created a space exclusively for rural women to come together and interact.

### (c) Impact of Inter-Agency Linkages on Livelihoods

Two achievements of WOTR in forging inter-agency linkages for generating livelihood impact in VBgaon included the knitting together of local Panchayat representatives, VWC, and SHGs/SMS for successful field implementation of IGWDP, and entering into a formal understanding with the Forest Department for treating forest slopes.

In the first case, though all the SHGs held accounts in a local Bank, they were not successfully 'linked' to the financial institution. Revolving funds from the SMS came to the aid of SHG members in need of larger production credit. Linkages of the intervening agency with the Zila Parishad also facilitated – to some extent – the flow of information on benefits from various Government Schemes (like the National Old Age Pension Scheme – NOAPS) through the locally (and unanimously) elected Panchayat representative to the village.

The collaboration ensured by WOTR between the VWC and the State Forest Department ensured local access to 36 ha forestland on the slopes. Treatment of these slopes was a necessary pre-condition for making ridge-to-valley mode of IGWDP implementation effective and sustainable. At the same time, the grass produced from this land augmented the fodder requirements of households engaged in animal husbandry as a core or supplementary livelihood activity.

## VI. SPECIFIC LIVELIHOOD INITIATIVES AND THEIR OUTCOMES

The depth of WOTR's interventions, including their impact on the lives and livelihoods of the VBgaon watershed community, is revealed from the five caselets discussed below.

### a. Sanjana, the Tailoress

Sanjana (name changed) is a member of Saraswati SHG organised by WOTR in VBgaon. She came from Chanda village in Nyavasa District to VBgaon in 1992, after her marriage to Vijay, a tailor. Rainfed bajra produced from three acres of land owned by their father which Vijay and his brother jointly tilled was just enough for household consumption and their share lasted only about a season. Sanjana learnt tailoring from her husband and started sewing blouses; their tailoring shop was run from rented premises. With monthly earnings

of about Rs. 2000 from tailoring, the couple barely managed to make both ends meet. The couple's financial worries started when their two children approached school-going age.

Sanjana was a member of Saraswati SHG formed in 1997 and regularly saved Rs. 50/month. When the female customers started dropping into their shop looking for a pico-fall facility occasionally, Sanjana sensed a business opportunity and took a loan of Rs. 5000/ (at a monthly simple interest of 2%), for purchase of a pico machine – the only one in the village at that time. Sanjana operated the pico machine and their monthly earnings went up to about Rs. 3000/ they repaid the SHG loan within a year.

With Vijay's consent, Sanjana took Rs. 10,000/ as her second loan from the SHG and opened the first grocery shop in the village (the nearest grocery shop was in Karanje, 7 km from VBgaon), using the borrowed amount to purchase about four month's stock of groceries. The shop was an instant hit in the village and Sanjana was able to repay her second loan in a year and a half.

In 2005, the couple decided to accept a friend's goodwill offer of quarter of an acre patch of unused land to set up their own tailoring shop as it would save them Rs. 500/ as rent. The amount Rs. 20,000/ requires for construction of a temporary shop was too huge to be borrowed from the SHG. They did not have a bank account and therefore sought help from a better-off, own-caste household in the village. The middle-aged lady in that household – who was aware of Sanjana's hard-working nature from their interactions during SHG meetings –took a "proxy" loan of Rs. 20,000/ (in her own name) from the Bank in Karanji; and on-loaned the entire amount to Sanjana at the interest rate charged by the Bank. In November 2005 the tailor couple started operating their shop from a brand new tin-structure constructed on their friend's land. They also purchased a hem-lock machine and another sewing machine to improve the quality and efficiency of their work, and also to compete with another tailoring shop that had come up in the village the same year.

Sanjana and Vijay also tried to benefit from the support provided by WOTR to take up dryland horticulture in the village. The couple acquired 135 seedlings of pomegranate from the agency and planted them on their father's land in 2001-02. According to the estimate provided by Vijay, they stand to earn at least Rs. 2000/ per annum from the 135 pomegranate trees (Selling Price @Rs. 4/fruit; and 4 fruits/tree/year) planted on his father's land. As per the guidance received from WOTR's staff, Vijay and his brother continue to undertake silvicultural operations and retain only 10-12 flowers per tree, to boost fruit production. Their bajra crop also benefited from soil and water conservation works carried out in and around their land under the watershed programme.

The main outcomes of WOTR's interventions for Sanjana's household and herself have been:

- ✚ Increase in the couple's entrepreneurial spirit and loan absorption capacity;
- ✚ Regularisation of the household's savings
- ✚ Increased investment in productive assets leading to increase in monthly household income from Rs. 2000 to Rs. 5000
- ✚ Diversification of income opportunities<sup>9</sup>
- ✚ Effective deployment of social capital for increasing household income

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<sup>9</sup> especially important and timely, as land ownership and tenure was not secure

- ✚ Increasing the sustainability of returns from land by practising dryland horticulture
- ✚ Increased production of bajra (from 15 quintals to 35 quintals) from rainfed land
- ✚ Increased participation in village meetings (especially, VWC meetings and the Gram Sabha), and improved relations and interaction with other women and households
- ✚ Increased sense of self-confidence and self-sufficiency (with respect to income generation) felt by Sanjana.

The only risk to their tailoring business, according to Sanjana, came from its dependence on the incomes of their customer households in VBgaon (many of whom are agriculturists). According to Sanjana, their customers normally invested in new clothes only upon reaping a good harvest or during festive occasions.

Sanjana now wants to learn embroidery and purchase a few more pieces of specialised machinery and tools for their tailoring shop, all of which will require further investment and larger loans. Thus they expressed a need to link directly with the Bank but didn't know how to approach the bank.

Apart from her enterprise-related concerns, Sanjana felt that the drinking water problems of VBgaon remain only partially solved. Though physical structures constructed under IGWDP have ensured increased groundwater recharge and water storage during monsoons, meaning that their water supplies lasted longer now, the community's dependence on rains for meeting household and drinking water needs remains unaltered. Sanjana still wakes up at four in the morning and spends over an hour stocking their daily household requirement of water, by making two rounds to the village well. Inadequate rainfall during 2005-06 has meant that village households cannot afford to use available water for their customary daily cleaning and dung-layering of house. This paucity of water along with the lack of latrines and sanitary facilities is a cause of constant discomfort (and the sight an eyesore) for Sanjana (and many other women in VBgaon). But then, felt Sanjana, these activities did not come under WOTR's programme mandate, and it was for the village to start thinking about them.

#### **b. Sreeram, the Potter**

Sreeram is a *kumbhaar* (or potter) by caste who until a decade ago was a full-time potter by profession. He was forced to work as agricultural labour - for at least three months every year - in villages near and farther away from VBgaon because of the declining local demand for mud-utensils (as the plastic wave overwhelmed the Indian countryside, in Maharashtra and elsewhere). He owned and cultivated one acre of rainfed land which in a good year gave a yield of five quintals of bajra (for consumption), and one quintal fodder grass (for sale). His annual cash earning from farming own land stood at around Rs. 4000/ while Rs. 8000/ came from the couple working for three months as agricultural labour.

Sreeram saw the soil and water conservation works of WOTR as a 'labour opportunity at the doorstep'. Over the next three years, he and his wife together earned around Rs. 50,000 from labour works within VBgaon. Sreeram's wife also took benefit of the WOTR intervention. She joined a SHG in the hope of getting access to collateral-free credit. Since 1999, she has taken four loans amounting to a total of Rs. 10,000 from the SHG. Sreeram invested most of their earnings from agricultural labour and the amount from loans in pottery-spending on raw material as well as transportation to take his pots to more lucrative, larger, and distant markets, and agricultural development (expansion as well as

intensification). He has also borrowed from his relatives in other villages frequently to make good any gap between needed credit and available through the SHG.

Over the past six years, with the borrowed amounts as well as increased earnings following each injection of investment, Sreeram has been gradually able to:

- ✚ Bore a well and install a pumpset for irrigation at a cost of Rs. 30,000/
- ✚ Purchase three acres of land for Rs. 52,000/ and devote it to bajra and jowar production;
- ✚ Dig a well for meeting drinking and other household water needs for Rs. 70,000/
- ✚ Invest Rs. 16,000 to develop his one acre of rainfed land into a dryland horticulture plot planted with 20 pomegranate trees.

In 2004-05, Sreeram made an earning of Rs. 4000/ from his horticultural plot. This year, he expects to earn Rs. 20,000/ (net), as his pomegranate trees have matured to bear larger and more numerous fruits, which he credits to irrigation and the use of chemical fertilizers. Guided by WOTR's technical staff, he also successfully took up cultivation of fenugreek, onion, and chillies on farm bunds in the horticultural plot, and hopes to earn at least another Rs. 2000/ from that produce. All these expected gains are in addition to the food security and drinking water availability ensured for this household.

Sreeram looks at agriculture and horticulture as entrepreneurial activities which require regular investment to generate increasing returns, in the face of imminent risks. He cites the 'labour work' started by WOTR in the forest on hill-slopes of VBgaon, as having shown him the hope and triggered his entrepreneurial spirit, setting him on a saving-credit-investment cycle which has improved his household earnings drastically (from Rs. 12,000/ per annum pre-watershed to about Rs. 50,000/ post-watershed). His future plans include installing a drip irrigation facility in his horticultural plot. He requires a loan of Rs. 25,000/- for the investment and as the SHG would not be able to give this amount he is depending on his relatives to provide the amount to him.

### **c. Laxmandas: From Landless to Landowner**

Laxmandas migrated to VBgaon with his family as a five-year old, about 40 years ago. His father did not own any land in the village and eked out a living working as a carpenter and agricultural labour. When Laxmandas grew up and married a village girl, his predicament was no different. He and his wife worked as labour at construction sites and as farm hands mostly outside the village. Their average monthly income hovered around Rs. 1500/. With two children to feed, Laxmandas often borrowed small amounts to meet their household consumption and contingency needs from his sister's family (living) in another village.

Laxmandas grabbed the 'labour opportunity' offered by WOTR intervention in the village. He laboured along with his wife and elder son (now 23 years old), at IGWDP work sites for 5-6 months every year, for about 5 years, besides attending to carpentry jobs in the village and managed to save around Rs. 40,000/ in this period.

In 2002, sensing a future in agriculture in the village - following watershed development works - he purchased two 3 acres plots of rainfed land in VBgaon, @ Rs. 50,000/ plot. Besides investing all his family's savings, he borrowed Rs. 40,000/ from his sister's family to make good the cash deficit for land purchase. On these lands he planted 200 trees of pomegranate-using seedlings distributed free-of-cost by WOTR- as the lands were rainfed and of poor quality. Laxmandas also took bajra, groundnut, and onion in the inter-spaces, but obtained a yield sufficient only for subsistence. None of the pomegranate trees, though

four years old already, have flowered so far, and Laxmandas's younger son attributes this to lack of water.

In 2004-05, Laxmandas took a loan of Rs. 14,000/ from a local farmers' co-operative society, where his son (aged 20) works as a clerk and purchased a cow from a co-villager to increase the household's milch cattle ownership to two. However, the cow died soon after, leaving him in debt. The same year, he tried to dig a well in his parched field, but struck no water after digging up to 20 feet. He wanted to dig further, but needed to invest Rs. 30,000/ to 40,000/ more to continue his pursuit for water. Since Laxmandas did not consider it appropriate to approach his sister for another back-to-back loan, he decided to migrate<sup>10</sup> in January 2006, with his wife and elder son to Baghur<sup>11</sup> (40 km from VBgaon) for cultivating another farmer's land there. The family expects to save at least Rs. 20,000/ from four months of labour in Baghur.

Laxmandas's younger son is neither satisfied nor optimistic about the lot of his family. He believes that his father was able to graduate from being landless to a landowner by his own family's sheer hard work, though WOTR's interventions did provide an opportunity and the initial push. He and others believe that in the post-IGWDP phase, the landless might find it tough to earn their livelihood, especially if the rains fail. Also, they feel that because of the present dissatisfactory management of the project in the village and the dissatisfactory state of affairs in the VWC, the investment in livelihoods development at the village level will be negligible in VBgaon. Those who have got a 'good start-up' from the project can expect to flourish, while the rainfed farm-owners will also continue to struggle till another project comes.

**d. Manohar: From Mono- to Multiple Cropping**

Manohar owns 30 acres of rainfed land. Before WOTR's intervention, he used to take a single crop of bajra; if it rained well in a particular year and some water was available even after the rains, jowar was also taken. The annual income of this agriculture-dependent household ranged from Rs. 10,000/ to 15,000/. Crop production was highly susceptible to rain-failure and drought, which they faced every 2-3 years.

When IGWDP implementation started in VBgaon, Manohar's wife enrolled as a member of Tuljha Bhawani SHG and started saving @Rs. 20/month. In 2002, she took a loan of Rs. 12,000/ for house-flooring, something she had wanted to do for several years. Then again, in 2003, she borrowed Rs. 8300/ from the group to dig own well and increase her household's self-sufficiency for drinking water. Off and on since then, she has taken many small loans - ranging from Rs. 2000/ to Rs. 4000/ - from her SHG, to meet individual and households consumption needs that she prioritised.

Manohar too found greater hope in pursuing and investing in agriculture, post-IGWDP. Aided by increased water storage and ground water re-charge due to soil and water conservation works, Manohar's cropping pattern changed drastically (Table 6). Consequently, his annual income more than doubled to cross Rs. 30,000/ at least theoretically. With technical inputs from WOTR, Manohar also started taking green fodder after rains, and planted 50 pomegranate trees that are ready to fruit this year.

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<sup>10</sup> For the first time since IGWDP started in the village

<sup>11</sup> Laxmandas got a whiff of this labour opportunity from his relatives living in Baghur.

**Table 6: Post-IGWDP Cropping Pattern Agricultural Earnings of Manohar**

Crop	Acreage	Cropping Period	Average Production (Quintals)	Utilisation	S.P. / Quintal (Rupees)	Income (Rupees)
Groundnut	0.25	June-September	5	Consumption + Sale	1200-1500	6000-7500
Bajra	2.00	June-September	7	Consumption + Sale	700	4900
Sunflower	?	June-September	4-5	Sale	1300	5200-6500
Jowar	7.80	September-February	7-8	Consumption + Sale	600	4200-4800
Cotton	1.00	July-December	7-8	Sale	1700-2000	11900-16000
Wheat	Depends on water availability	September-February	--	Consumption + Sale	700-900	---

Brighter agricultural scenario and increased incomes prompted Manohar to increase the size of their cow-herd from two to seven, for which he took a loan of Rs. 30,000/ from the local branch of a Nationalised Bank (@ 9% per annum, against land as a collateral). Their household income from milk sales increased fourfold from Rs.2000 to Rs.8000. However, for producing green fodder, jowar, wheat, and groundnut, Manohar continues to depend largely on the availability of supplemental and/or stored water for irrigation. This availability, he felt, had increased post-IGWDP but was still not dependable. Citing the example of 2005-06, which was a rain deficient year, Manohar claimed that while small amounts of water might be available for drinking till March-April 2006, production of Rabi crops could be largely ruled out.

Manohar, felt that while landowners stood to benefit the most from watershed-based development if it rained, their risks were also very high as cost recovery could also be difficult if rains failed. Landless households and small and marginal farmers, on the other hand, could migrate for work to neighbouring villages and their at-risk investment (read stakes) was low. He felt that the risk was similarly low for those households engaged in off-farm enterprises like tailoring, as their occupation was not rain-dependent.

In the near future, Manohar's young son plans to take up Anjeer plantation on their land which would require an investment to the tune of Rs, 70,000/ to 80,000/acre, on planting material as well as irrigation infrastructure. He is on a look-out for suitable alternative financing options for the same, as his mother's SHG would not give such a huge amount. Nevertheless, he feels that his household would not have thought 'so big' if WOTR had not intervened to change the face of their village and their mentalities.

**e. Somesh: 'My well is a success!'**

Before WOTR intervened in the village through IGWDP, Somesh cultivated two rainfed land plots of 3.5 acres each in VBgaon, and worked as an agricultural labour outside the village every year during the Rabi season.

Somesh started working as a labour for soil and water conservation works of IGWDP in VBgaon; he earned a daily wage of Rs. 50-60/ as against Rs. 40/ that he received earlier. Somesh also slogged on his own field, levelling it and making farm bunds. In 2002, unlike

earlier when he did not even risk thinking of digging a well, he along with his two brothers, (who contributed equally) took the risk of digging a well (at the cost of Rs. 45,000/) in one of his plots because of the expected impact of watershed treatment in groundwater recharge. The well was a 'success'.

Somesh could now devote half of his land to irrigated agriculture. From the single crop of bajra, Somesh shifted to taking onions, sorghum, and green fodder on his irrigated plot, and continued taking bajra with 5-6 newly planted Squash trees in the rainfed plot. He met the water requirement of his horticultural crops by purchasing water from a bore well owned by a village resident @ Rs. 100 / 5000 litres<sup>12</sup>. However, Somesh was unsure of the quality of the agricultural inputs such as seeds and fertilizers purchased from retailers and considered the investment risky for 'amateur' irrigated farming practitioners like him.

Like other farmers, Somesh also sells his agricultural produce individually in Ahmednagar market, and has been struck by wide fluctuations in commodity prices there. For example, Jowar selling @ Rs. 900/quintal in early January 2006, had slipped to Rs. 600/ by early February. Onions prices had similarly crashed from Rs. 1200/quintal to a meagre Rs. 200 during the same period. In the absence of storage infrastructure for grains and storage technology for onions, Somesh and other farmers continue to suffer losses even after reaping a good harvest. He feels that there was a role for the Government (and not WOTR) in ensuring that the farmers received a good price for their produce. The household earns Rs. 2000/ every month from sale of milk from their only cow. Fodder for the cow is sourced from treated and regenerated forest on the slopes<sup>15</sup>.

Although Somesh is a member of Ahmednagar District Co-operative Central Bank (which has a branch in Karanjee), he has never taken any loan from it because he found the Bank's procedures complicated and the demeanour of Bankers intimidating. He also feared the repercussions of default. His wife has not joined any SHG, as the meetings are held at locations distant from their house, and Somesh does not want her to travel away from home.

## **VII. ANALYSIS**

In VBgaon, WOTR identified a pressing need and also a demand for improving groundwater recharge to augment water supplies for both domestic and production purposes. It also found that lack of sufficient labour opportunities for marginal and small farmers as well as for the landless in the village, especially during dry months, was forcing them to migrate. There was, in other words, a demand to increase income and employment security and stability in VBgaon. It was this demand that WOTR sought to fulfil through IGWDP implementation in the village.

### ***Improving the Asset base and Cash Incomes***

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<sup>12</sup> There are two water-selling households (both Marathas) in VBgaon. During the four water scarce months (February to May), about 20 households in VBgaon were identified as being forced to purchase water to meet their household consumption needs, even post-IGWDP.

<sup>15</sup> Though Somesh was a member of the village JFM Committee (JFMC), he was unaware of his membership. In VBgaon, the JFM programme or its awareness as well as JFMC's functioning remained non-existent.

The impact of SHG-based intervention succeeded in balancing the male-bias of conventional watershed programmes, by strengthening the income-generation role of women and their financial hold within the household. Several alternative income generation opportunities supported through credit from SHGs were selected depending on a rough assessment of demand within the village, and women entrepreneurs' preferences. During IGWDP's tenure, the cash situation of households in VBgaon did begin to improve and so did the credit flow in village economy following SHG formation.

While WOTR invested heavily in the development of both private and public lands in the watershed approximately in the ratio of 5:2, individual farmers too invested about 2/3 of the investment on their land for developing irrigation infrastructure to harness water storage and recharge gains of IGWDP. The community members also made their own financial investments (often exceeding 90%) in establishing private, non-farm enterprises; for this, some direction and guidance was provided by the WOTR staff.

### ***Informing Interventions through In-depth Understanding of the Community and its Resources***

During the Capacity Building Phase (CBP), close interaction of WOTR's personnel with the local community seemed to have resulted in their gaining in-depth understanding of the knowledge, capacities, and preferences of various households, as also their limitations. This is evident from the following observations:

- ✚ As meeting the rural community's basic, water-related needs by promoting groundwater recharge was the thrust of WOTR's intervention in VBgaon, greater and an earlier emphasis was laid on retarding the flow of rainwater draining through private and public lands located in the ridge portion, by constructing smaller and simpler structures like bunds, trenches, and check weirs
- ✚ In order to provide greater wage employment opportunities within the village for the landless and small and marginal farmers (esp. during the agricultural lean season), physical works carried out on forestlands in the ridge portion deployed only local labour.
- ✚ Horticulture was promoted largely among households having land 'in excess' of that devoted for crop production, and the ability to afford and garner additional irrigation resources
- ✚ Livestock rearing was the second most important livelihoods activity in VBgaon. Thus, augmentation of fodder resources (by grass seeding on forest land and promotion of green fodder cultivation on private lands); and improvements credit flow (to support the acquisition of improved cattle breeds by the village households) were interventions designed to build-on the existing skill-base and occupational preferences of the local community.
- ✚ Women members of SHGs were encouraged and financially supported to pursue self-employment avenues which exploited their existing sets of skills and temperament, had lower start-up costs, seemed to have lesser potential competition for goods or services produced as compared to the market demand, and preferably also won the support (and at times, involvement) of other family members in the trade.

### ***Dilution of Livelihoods Focus by Dependence of Natural Resource Augmentation Benefits***

The outputs of WOTR's intervention in VBgaon were along expected lines. However, apart from targets set for physical works, number of local institutions, and group finances, only a rough visualisation of possible livelihood impacts was part of the agency's intervention design. No specific qualitative or quantitative targets for improvement in household

incomes, quality of life or drinking water availability were set, as expected to flow automatically from watershed development activities, local institution development and enhanced credit availability under the programme. Development of sanitation infrastructure in VBgaon was not prioritised, though during field studies village women identified it as the second most important area of intervention (after the provision of drinking water) for ensuring their welfare. Since WOTR's interventions were part of IGWDP's framework, apart from the disbursement of production credit through SHGs, WOTR's initiatives could not quite innovate or extend beyond the watershed development blueprint.

### ***Neglect of Water Demand Management***

A great deal of focus was laid on the development of natural resources in the watershed. The objective was to collect raindrops whenever or wherever it rained and make rainwater available for agriculture and cattle use besides for groundwater recharge. These interventions bore fruit when the area experienced good rains in 2004-05 and farming households as well as the landless were able to capitalise it. However, once again, pinch was felt in the subsequent year which was rain-deficient, as agricultural incomes of small and marginal farmers were still dependent on rains. Similarly landless households suffered, also because the labour requiring physical works of IGWDP had concluded way back in 2002.

As part of WOTR's intervention, no attempt was made to manage water demand, and the number of tubewells being dug up in the watershed might not augur well for the groundwater situation of VBgaon in future. Drinking water shortage also continued to be felt in the dry years (though with lesser severity and a bit later in the year than in the pre-intervention times). Villagers were already complaining of shortage of water for drinking and other household use at the time this study was being conducted in February 2006. Though the physical structures established under IGWDP in VBgaon were appropriate for the selected sites and they did increase surface water availability for the community for at least three and a half months after the rains, groundwater storage was inadequate. Thus, drought proofing was not 100% successful in VBgaon; this was - in all probability - because of the presence of a layer of hard murum having low infiltration and water holding capacity beneath the soil layer.

### ***Lack of Hand-holding for Sustainable Enterprise Promotion***

WOTR left the job of enterprise promotion – as was also the case with agricultural and horticultural development interventions in VBgaon – incomplete, as the agency failed to provide support for establishing new channels for marketing and distribution of products and services generated through those enterprises. In almost all the cases, enterprise owners (or tyro entrepreneurs as they were) were left responsible for working out and exploiting marketing and distribution channels for their products and services. Input supply for agriculture and allied enterprises remained risky, e.g., the newly purchased milch cattle of some households died of illness soon after acquisition, and seed quality for crop remained doubtful.

Returns from intensive agriculture remained prone to wide market fluctuations. For example, recently prices of onion in the region's markets witnessed a downward spiral. Farmers from VBgaon also suffered, because of the lack of both technology and infrastructure for storing onions, and for that matter any other agricultural produce. Unable to hold their surplus produce till prices rise, they faced the Hobson's choice of either selling their produce at throwaway prices (@ Rs. 1-2 / kg) or letting it waste and rot. Similarly, though dryland

agriculture diversified local income sources and spread the risk of a predominantly farming community, producers of horticultural crops like pomegranates remained vulnerable to market fluctuations, as WOTR's interventions did not address these marketing issues.

Following SHG and SMS based microcredit intervention, the willingness and capacities of households in VBgaon to absorb credit increased. While this had positive repercussions for the status of women in the village, amounts in excess of Rs. 20,000 were not generally sanctioned to individual borrowers. Bank linkages of SHGs were not forged. Credit supply, thus, could not match the enhanced credit demand, which continued to only be fulfilled through loans from relatives, moneylenders, or *bhishhis*. Flexibility offered to the borrowers to determine the volume of credit, the process and period of repayment, coupled with minimal paperwork requirement, and the timeliness of credit 'disbursal' continue to attract borrowers to informal credit providers, including exploitative moneylenders. Thus, WOTR's livelihoods promotion interventions left crucial gaps where the creation of forward and backward linkages for developing sustainable enterprises was concerned.

One of the major contributions of WOTR's interventions in VBgaon has been community organisation and local institutional development. However, post IGWDP, chinks in the VWC armour have begun to appear. It might be a representative institution, mathematically-speaking, but is not truly democratic. In the absence of continued nurturance and monitoring from WOTR, the VBgaon VWC might end up collapsing. The SHGs, however, are on the right path and ready to be linked to Banks.

It seems that WOTR realised that though IGWDP had concluded, the livelihoods of landless in VBgaon were far from sustainable. Hence, in the post-project phase, it organised women representatives of landless households into a seventh SHG, with the aim of promoting non farm income generation. Old and destitute women came forward eagerly to join this group with great hope and out of dire need. Though belated, it is a commendable beginning from WOTR as it begins to assimilate learning from its attempts at WDP-based livelihoods development in watersheds like VBgaon.

## **VIII. CONCLUSION**

WOTR has successfully replicated and outscaled VBgaon-type of initiatives for livelihoods promotion through watershed development in other watersheds as well, but those remain clinical interventions aimed at watershed development, with livelihood initiatives sprinkled over. In the absence of a systemic inclusion of livelihoods promotion in watershed-based programmes, upscaling this model is not possible since it is myopically focussed and dependent on intra-village economy and resources, which are limited. Finally, WOTR's aim to create synergistic partnerships across all sectors – which was supposed to be the agency's flagship strategy as per the Sangamner pattern – remained elusive, as far as livelihoods promotion in the watershed was concerned.

## ANNEXURE 1: CHECKLIST FOR INTERVIEWING INDIVIDUAL BENEFICIARIES

Name:

Age:

Caste:

### Asset Profile: Pre- and Post- Intervention

#### 1. Physical Assets

- ✚ Land – arable/non-arable; owned/sharecropped; irrigated/rainfed; extent; land treatments done
- ✚ Transportation
- ✚ Electricity and Communication
- ✚ Machinery – farm / non-farm
- ✚ Wells and other man-made water sources
- ✚ Other technologies
- ✚ Asset aspirations and scope of their fulfilment

#### 2. Natural Assets

- ✚ Water – for consumption and production
- ✚ Fuelwood, fodder, and forest products
- ✚ Soil type and fertility
- ✚ Farm animals
- ✚ Seasonality in asset production
- ✚ Asset aspirations and scope of their fulfilment

#### 3. Human Assets

- ✚ Number of adults and children in household
- ✚ Educational attainments
- ✚ Health status
- ✚ Professional training, experience, and exposure
- ✚ Number of persons involved in various economic activities
- ✚ Asset aspirations and scope of their fulfilment

#### 4. Social and Institutional Assets

- ✚ Same-caste base in village
- ✚ Membership of organisations like VWC, SHG, JFMC, others
- ✚ Policies and programmes supporting and/or influencing livelihoods
- ✚ Participation and contribution to social activities
- ✚ Aspirations and scope of their fulfilment

#### 5. Financial Assets

- ✚ Individual and household cash flow
- ✚ Seasonality in cash flow
- ✚ Savings – mode, extent, and purpose
- ✚ Credit – access, sources, volume, purpose, and deployment
- ✚ Aspirations and scope of their fulfilment

### Livelihood Activity in Focus

1. Choice of activity
2. Activity components and socio-technical requirements
3. Financing
4. Other support expected and/or available
5. Impact on individual and household asset base
6. Sustainability of activities, returns, and impacts
7. Scope of up-scaling
8. Satisfaction with impact
9. Future aspirations and their scope of fulfilment

### Livelihood Shocks and Vulnerabilities

1. Natural shocks – rains, storms, weather fluctuations, disease and pest attack, seasonality, and others
2. Social shocks – social unrest, others
3. Health shocks – disease and disability, unemployment, death
4. Market fluctuations – input, output, and intermediary product/service markets; industrial turbulence
5. Financial shocks
6. Policy shocks
7. Strategies created as part of the watershed intervention to deal with or counter the above shocks and vulnerabilities
8. Proposals and suggestions for future risk mitigation and shock bearing
9. Project termination as a shock

### Institutional Landscape of Livelihood Intervention

Institutions Relevant for Livelihood Intervention	Services Provided	Access and Support Ranking	Suggestions
✚ Intervening NGO			
✚ Markets (local, national, and regional)			
✚ Bank			
✚ Government Departments			
✚ Training agencies			
✚ Input providers			
✚ Policies and programmes			
✚ Institutional innovations			
✚ Industrial landscape and future prospects			
✚ Others			

### **ANNEXURE 3: CHECKLIST FOR INTERVIEWING SHG MEMBERS**

1. Group history, composition, and institutional recognition
2. Objectives of group formation and its linkages with
3. Asset profile of group members
4. Livelihood activity profile of group

<b>ACTIVITY</b>	<b>PURPOSE</b>	<b>CHANGES POST-WDP IMPLEMENTATION</b>

5. Impact of livelihood activities on different assets of individual members and the group
2. Shocks and threats to the integrity and livelihood activities of the group
3. Strengths and weaknesses of the group and its members for promoting sustainable livelihoods
4. Future livelihood-related aspirations of the group and its members
5. Kinds of support and environmental conditions required for meeting the above aspirations

### **ANNEXURE 4: FORMAT FOR DATA COLLECTION ON ENTERPRISE CASELETS**

1. Objective of the Enterprise
2. Main Activity
3. Geographical Location and Coverage
4. Number of People Involved
5. Nature of Entrepreneurs and their Socio-Economic-Cultural Background
6. Number and Nature of Employees
7. Involvement of People at Different Stages, their Background, Training, and Remunerations / Incentives, Reporting Structures, etc.
8. Available Options for the Business Process Adopted
9. Nature of Business Process
10. Skill and Technology Requirements of the Business Process
11. Justification for Various Choices made (from S. No. 09-11)