## 1. Project Data:

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### Project Details:

- **Project Name**: Uttaranchal Decentralized Watershed Development Project
- **Project Costs (US$M)**: 89.35 (Appraisal), 114.38 (Actual)
- **L/C Number**: C3907
- **Loan/Credit (US$M)**: 69.62 (Appraisal), 82.93 (Actual)
- **Sector Board**: Agriculture and Rural Development
- **Cofinancing (US$M)**: 18.73 (Appraisal), 31.45 (Actual)
- **Cofinanciers**: Local Communities (9.46 million)
- **Board Approval Date**: 05/20/2004
- **Closing Date**: 03/31/2012
- **Sector(s)**: General agriculture fishing and forestry sector (35%); Crops (20%); Sub-national government administration (20%); Animal production (20%); Agro-industry (5%)
- **Theme(s)**: Other rural development (33% - P); Participation and civic engagement (33% - P); Water resource management (17% - S); Rural policies and institutions (17% - S)

### Preparers:
- **Prepared by**: J. W. Van Holst Pellekaan
- **Reviewed by**: John R. Eriksson, Christopher David Nelson
- **ICR Review Coordinator**: IEGPS1

## 2. Project Objectives and Components:

### a. Objectives:

The project appraisal document (PAD) for the Uttarakand Decentralized Watershed Development Project (UDWDP also known as Gramya I) states the project development objective (PDO) as "to improve the productive potential of natural resources and increase incomes of rural inhabitants in selected watersheds through socially inclusive, institutionally and environmentally sustainable approaches " (page 2).

The Development Credit Agreement (DCA) states the project's objective as "to assist Uttaranchal in improving the productive potential of natural resources in the project area and increasing incomes of rural inhabitants in selected watersheds through socially inclusive, institutionally and environmentally sustainable approaches " (Schedule 2).

While the DCA does not define "socially inclusive," "institutionally sustainable approaches," or "environmentally sustainable approaches," the PAD defines them in terms of themes which are referred to in Section 4.

Note that before independence Uttaranchal was a part of the State of Uttar Pradesh. At independence, its name remained Uttaranchal but in 2006 (after project appraisal in 2004) it was renamed Uttarakhand. This name will be used in this Review unless there is a reference to the state using its former name in a quote.

The Global Environmental Objective (GEO) for the Sustainable Land, Water and Biodiversity Conservation and Management for Improved Livelihoods in Uttarakhand (SLEM) funded through additional financing to UDWDP was defined in the Project Paper as "to support the restoration and sustainability of ecosystem functions and biodiversity while simultaneously enhancing income and livelihood functions, and generating lessons learned in these respects that can be up-scaled and main streamed at state and national levels " (Project Paper for
Additional Financing Grant from the GEF, paragraph 12).

The GEF Grant for SLEM defined the GEO as "to scale up the original project in order to restore and sustain ecosystem functions and biodiversity while simultaneously enhancing income and livelihood functions, and generating lessons learned in these respects that can be scaled up and mainstreamed at the state and national levels" (GEF Grant Agreement, page 1). These objectives complemented the objectives in the DCA.

For this Review the objective in the DCA for the UDWDP will be used against which to assess this project’s achievements.

b. Were the project objectives/key associated outcome targets revised during implementation?

Yes
If yes, did the Board approve the revised objectives/key associated outcome targets?
Yes
Date of Board Approval: 12/07/2010

c. Components:

A. Components for the IDA Credit for the Uttarakand Decentralized Watershed Development Project (Gramya I)

1. Participatory Watershed Development and Management (original estimated cost US$55.95 million; actual cost US$64.29 million). This was the most important component with two Sub-components:

   (a) Promotion of social mobilization and community driven decision making which financed participatory watershed planning at the village level; establishment of Revenue Village Committees (RVCs) as representative bodies of resource users; identification of treatments on arable and non arable lands; and, integration of RVC proposals into Gram Panchayat Watershed Development Plans (GPWDPs).

   (b) Watershed treatments and village development which provided average budgets equivalent to $80,000 to each Gram Panchayat (GP) based on a formula incorporating the area and population. Within this budget, communities would prioritize, implement, operate and maintain village development and watershed investments as articulated in GPWDPs.

2. Enhancing Livelihood Opportunities (original estimated cost US$14.25 million; actual cost US$23.06 million). This component focused on increasing productivity and supporting vulnerable groups:

   (a) Farming systems improvement by drawing lessons from the Integrated Watershed Development Project (Hills II) and the Diversified Agricultural Support Project (DASP), increasing the role of the private sector, input supply and support services, and increasing participation of farmers in technological choice. Improved technologies for agriculture, horticulture, silvi-pastoral treatments and animal husbandry were to be introduced through cofinancing of demonstration sub-projects with Farmer Interest Groups (FIGs).

   (b) Value addition and marketing support through the establishment of an agribusiness pilot that would be used to identify potential niche market opportunities and establish links with private sector entrepreneurs who could help in exploiting market potential, and co-finance storage, processing and or marketing infrastructure, and disseminate appropriate information and technology to farmers to facilitate their entry into production.

   (c) Income-generating activities for vulnerable groups through small income generating micro-enterprises for vulnerable groups. Self-Help Groups (SHGs) would be identified during the watershed planning process. Training was to be provided to vulnerable groups to encourage their entrepreneurial development. Funds would be disbursed through the Gram Panchayats (GPs) to the SHGs, who would manage them.

3. Institutional Strengthening (original estimated cost US$17.29 million; actual cost US$19.53 million). Sub-components were as follows:

   (a) Capacity building of GPs and local community institutions including training of elected officials in GPs, community representatives, self help groups and other stakeholders applying the Environmental and Social Management Framework (ESMF) as well as incentive funds to GPs to encourage better performance.

   (b) Information, Education and Communication (IEC) financed a communications strategy to increase general awareness about the project, terms of participation and overall transparency amongst all stakeholders.

   (c) Project coordination, monitoring and management financed organizational change management
initiatives to realign the Water Management Directorate (WMD) to new implementation arrangements, development of links between the Management Information Systems (MIS), Geographic Information Systems (GIS) and impact evaluation, participatory monitoring and support to the WMD.

B. Components for the GEF Grant for the Sustainable Land, Water and Biodiversity Conservation and Management (original cost US$7.49 million; actual cost US$7.49 million)

The additional financing provided by GEF funded assistance for six activities which complemented Gramya I, namely (a) participatory development of micro-watershed development plans (MWDPs), (b) land degradation control at the micro-watershed level, (c) reduction in pressure and dependence on the natural resource base, (d) biodiversity conservation and management, (e) two studies on climate change adaptation in natural resource based production systems, and (f) project management.

These activities were focused on improving sustained access to water through decentralized water management as well as piloting alternative livelihoods that would enhance climate change mitigation and enhanced resilience to climate shocks in 20 selected Gramya I micro-watersheds. This activity was also managed through the Gram Panchayats.

d. Comments on Project Cost, Financing, Borrower Contribution, and Dates:

Project Costs. The original cost of the project was (US$89.35 million). The total actual cost including additional financing (US$25.03 million) and the GEF Grant was US$114.38 million, an increase of 28 percent over the original total cost.

Restructuring. The project was formally restructured once and approved by the Board in January 2011 which involved an additional credit of $7.98 million and amendments to the results matrix. Out of five PDO indicators, three were revised or clarified and there were changes to nine intermediate outcome indicators based on conclusions at the Mid Term Review (MTR) in November 2008. The target for one PDO indicator (“15 percent increase in the availability of water over baseline for domestic use”) was revised to 10 percent as was its definition to improve clarity at the MTR. This change was implicitly approved without comment in the Restructuring Paper dated December 7, 2010, but the change was not recorded in the ICR’s Data Sheet. For two PDO indicators the definitions were clarified. Among the intermediate outcome indicators the target for one was revised, two indicators were dropped and replaced by three indicators, and five were clarified. Changes in these indicators, together with the rationale for the changes, were summarized in the ICR (paragraph 1.4.1 and Annex 2, Table A2.1).

Financing and Borrower Contribution. The project was financed by $75.44 million from IDA compared with a planned contribution of $69.62 million, $7.49 million from GEF which was the same as planned, the equivalent of $21.99 million from the State Government compared with a planned contribution of $16.62 million, and the equivalent of $9.46 million provided by local communities compared with a planned contribution of $3.11 million (Annex 1).

Dates: The project’s additional financing, which included restructuring of the results matrix, was proposed on December 7, 2010. The GEF grant was approved on July 13, 2009. The closing date was not changed.

3. Relevance of Objectives & Design:

a. Relevance of Objectives:

High

The objectives, design, and implementation of the objectives for Gramya I and SLEM were consistent with the India Country Assistance Strategy (CAS) 2001-2004 because it contributed to “the CAS goals of accelerating rural growth and pro-poor rural development through holistic development of rain fed areas using a community driven and participatory watershed development strategy” (India Country Assistance Strategy Vol. I, June 27, 2001). It was also in line with the CAS for 2005-2008, and remained relevant to the Country Partnership Strategies (CPS) of 2009-2012 and 2013-2017. In the latest CPS, country outcomes were expected in terms of increased agricultural productivity, improved environment protection, and biodiversity conservation. The Federal Government classified Uttarakhand as a Special Category State, due to its hilly terrain, low population density, as well as the challenges related to water availability, soil erosion, and natural resource management. Gramya I aimed at addressing these challenges through decentralized, participatory watershed development. This aim was supported by the SLEM additional financing with its focus on climate change mitigation and adaptation. The State Government’s development policy also supported the project’s decentralized watershed development planning and implementation model, which built on the capacity of the GPs to deliver inclusive local governance.
The PDO and the GEO were therefore *highly relevant* to the objectives of Federal and State Governments as well as to the Bank's assistance and partnership strategies for India (ICR, paragraphs 3.1.1 and 3.1.2).

b. Relevance of Design:

**Modest**

Gramya I's design was based on previous successful watershed development projects in Uttarakand such as the Integrated Watershed Development Project II (IWDPII). The ICR noted in paragraphs 2.1.1 and 2.1.2 that lessons relevant to this project were also drawn from the Bank-financed Rural Water and Sanitation Project (SWAJAL), which promoted decentralization by building GP administrative capacity through enhanced community participation, and the Bank-supported Diversified Agriculture Support Project (DASP). The DASP influenced core elements of the project's design, namely: (a) improving project ownership and sustainability by sharing costs with the community; (b) enhancing the livelihood component by piloting agribusiness development; and (c) engaging NGOs as implementation partners to mitigate potential delays in project staffing or inadequate staffing.

The project was designed to embrace the poor such as those on small subsistence or marginal farm holdings (87 percent of farmers assisted had less than one hectare and of these 66 percent had less than 0.5 hectares), and the landless, women, and transhumance groups, who were assisted through the Vulnerable Group Funds or the Transhumant Action Plan in the project. The SLEM, supported by the GEF grant, mobilized Van Panchayats (VPs) or Forest Councils, which were mandated to manage community forests and later (authorized under a new Government Order) to undertake water resource treatment (e.g. drainage line treatment and check dam management) and natural resource conservation (e.g. afforestation, natural oak regeneration, and other plantation management) in reserve forests (ICR paragraph 3.1.2).

The PAD's results matrix (Annex 3) provided the project's development objectives and intermediate results for project components with indicators and targets for each, but it did not show the relations between project activities and outcomes. It also failed to display the institutions involved in generating the intermediate and final outcomes. In other words, it did not show the results chains that underpinned the project's proposed implementation program. The Borrower's ICR also commented that "The PDO indicator and log frame were inadequately formulated and hence could not completely capture the project impact and outcomes" (ICR, page 64). However, at the Mid Term Review the results matrix, including the indicators, was satisfactorily revised and, in conjunction with additional funding, later approved by the Board (ICR, paragraph 1.4.1 and Annex 2).

4. Achievement of Objectives (Efficacy):

**Project Development Objective**. Gramya's PDO "to assist Uttaranchal in improving the productive potential of natural resources in the project area and increasing incomes of rural inhabitants in selected watersheds through socially inclusive, institutionally and environmentally sustainable approaches", had three themes or sub-objectives (PAD, page 2) which were the same as the themes for the SLEM with its focus on climate change mitigation and resilience, and can be summarized as:

(a) *Increase soil moisture retention and improved biomass production to enhance incomes and livelihood options* through community participation in watershed development and management

(b) *Strengthen the administrative capacity of GPs to deliver sustained natural resource management services* beyond the duration of the project.

(c) *Ensure equitable participation by all groups*, especially the landless and women who rely disproportionately on common-pool resources for fodder, fuel, and other forest products.

The main outputs and outcomes achieved for these three sub-objectives in Gramya I are summarized below.

**4.1 Increase soil moisture retention and improved biomass production to enhance incomes and livelihood options - Substantial**

 Outputs
 - 468 GPs prepared and ensured participation by the poorest of poor and socially marginalized (including marginal farmers, landless, women, and scheduled castes/tribes) groups which was 4 percentage points more than originally planned (ICR, page 28)
 - 65 percent of the sub-grants were invested in water and natural resource management, such as soil conservation, drainage line treatment, and water harvesting (ICR, page 28) watershed development plans
by 2010 (Table A2.4),
- Remote sensing confirmed an increase of 9.4 percent in the biomass index and vegetative coverage (due to increased water availability combined with various plantation activities in non-arable lands which reduced erosion) compared with a target of 10 percent (ICR, paragraphs 3.2.2 and 3.2.5, and Data Sheet, PDO Indicator 2).
- Increased water flows and improved water availability by 12 percent for agriculture and domestic use compared with a target of 10 percent (ICR, page 11, paragraph 3.2.4 and Data Sheet, PDO Indicator 3).
- 16 percent increase in the availability of water over baseline in agriculture use which was 1 percentage point above the target (ICR, paragraph 3.2.2 and Data Sheet, PDO indicator 4).
- Improved varieties and high value crops were cultivated in 7,464 ha, which contributed to a 21 percent production increase over the baseline (compared with a target increase of 10 percent).
- Gramya I piloted agribusiness in 327 GPs (about 70 percent of targeted GPs). Agribusiness demonstrations covered about 50 percent of the project areas under irrigation and were co-financed by the FIGs, amounting to US$ 3.2 million. The farmer federations produced and sold 41,474 tons of high-value crops and off-season vegetables. Prior to the UDWDP, these crops were not cultivated in the targeted GPs (ICR, page 33).
- On-farm fodder was planted in 1,127 ha, pasture was developed in 1,676 ha, and Napier grass crop border was created along 1,907 running kilometers. As a result, there was an overall 9.6 percent increase in fodder availability in the targeted GPs (ICR pages 33 and 34).
- As a result of the demonstration of improved technologies 27 farmer federations produced and sold 41,474 tons of high value crops and off-season vegetables in local and national markets, which included 776 tons of processed products at a total value of about US$ 9.7 million (ICR, pages 33-35).
- Gramya I set up 265 natural animal breeding centers and 71 artificial insemination centers. They produced a total of 20,527 improved breed animals with average success rate of 58.3 percent (ICR, Table A2.8).

**Outcomes**

- Based on survey data in the "Final Impact Evaluation of UDWDP" and used in the ICR average annual household incomes in the project area in real terms increased by 26 percent compared with 9 percent in real terms in the control group. Hence on average the increase in household income attributable to the project was 17 percent during the project compared with the target increase of 10 percent. (TERI Final Impact Evaluation, page 25; ICR, paragraph 3.5.2 and page 61).
- Equity enhancing growth was also achieved as there was a 30 percent increase in real average annual household income among vulnerable groups (supported by the Vulnerable Groups fund) compared with a 23 percent increase in non vulnerable groups (TERI Final Impact Evaluation, Table 3.1 and ICR, paragraph 3.1.3).
- 6,743 farmers participated in processing off-season vegetables, 42 percent of whom were women self-help group (SHG) members. "These farmers realized a 27 percent increase in net revenue, which was 80 percent more than the 15 percent target" (ICR, paragraph 3.2.6 and page 34).

(b) Strengthening the administrative capacity of GPs to deliver sustained natural resource management services - Substantial

**Outputs**

- Each targeted GP under Gramya I managed approximately US$ 100,000 in implementing the GPWD, including the Vulnerable Group funds (ICR, page 39).
- There were substantial increases in the number of GP meetings, which more than doubled from 4.8 to 11.1 meetings per year, and attendance in Gram Sabha (which include the adult citizens of a village and can challenge the authority of the Gram Panchayats) meetings increased by 62 percent to 47 percent which was close to the target of 50 percent (ICR paragraph 3.2.7).
- Participatory monitoring and evaluations (PMEs) revealed that "project awareness rate was as high as 91 percent in targeted GPs (while the target was 50 percent)". Almost 50 percent of targeted GP constituents became more aware of the GP annual budget and expenditure (on target) (ICR paragraph 3.2.7).
- The project provided orientation training at the division and village levels, on the watershed concept, budget envelope, participatory planning and implementation, financial management, and safeguards. It also provided technical training to more than 32,000 GP members and female village motivators on participatory rural appraisal, 468 youth account assistants, and 7,020 community members in PME (ICR, page 39).
- In addition, more than 60,000 community members and 3,000 project staff had exposure visits in and outside of Uttarakhand in partnership with academic institutions and specialized government agencies (ICR, page 39). Gramya I conducted three rounds of participatory monitoring and evaluation (PME).
between 2006 and 2012, assisted by facilitating NGOs. All 468 targeted GPs participated in at least two rounds. The PME teams obtained feedback from community members, initially more on project awareness (PDO, GP budget, and expenditure) and on inclusiveness in beneficiary selection and benefit sharing. Nine grievances were filed and resolved. The PME teams also conducted social audits for the project-financed infrastructure (e.g., irrigation canals, roads - see ICR, page 39).

- A study planned as part of SLEM (but consistent with this sub-objective) on the impact of climate change on mountain ecosystems and the development of a mitigation and adaptation strategy was not implemented. The reason was the limited capacity to formulate highly technical terms of reference coupled with the delay in state government clearance and identification of an appropriate institution to conduct the study. As the ICR notes, this was unfortunate given emerging scientific evidence of the decline of mountain forests in the Himalayas as a result of increased mean ambient temperatures in recent decades (paragraph 3.5.13).

### Outcomes

- There was a 21 percent improvement (compared with a target of 20 percent) in administrative capacity of the Gram Panchayats (GPs) as measured by performance indicators, namely attendance at Gram Sabha meetings, participation of women in Gram Sabha meetings, participation of vulnerable groups at Gram Sabha meetings, number of Gram Sabha meetings per year, attendance at GP meetings (PDO indicator 5, ICR page 27). The

- The successful implementation of the project at the GP level validates the strengthened administrative capacity of the GPs. For example participatory monitoring and evaluation was regularly (at least three times) carried out in 400 GPs and reports received by Watershed Management Directorate (ICR, Gramya Intermediate Indicator 18).

- The TERI Final Impact Evaluation drew a lesson from the involvement of the Gram Panchayats and other local institutions stating that “Implementation of the project through the Gram Panchayat, the lowest administrative unit under the Panchayat Raj Institution and introduction of women ward member as a co-signatory at Water and Watershed Management Committee level was a successful experience which is being mainstreamed in to the Integrated Watershed Management Program a CSS of the Government of India” (ICR, page 64).

### Ensuring equitable participation by all groups - Substantial

#### Outputs

- The project’s participatory approach and capacity building encouraged village level project staff as well as various project formed group members to participate in local government elections. The ICR shows that 304 of them were elected, 73 percent were women (Table A2-10)

- Fifty-two percent of elected Gram Pradhans (GP heads) were either women, SHG members or village motivators. Likewise, 66 percent of Block Development Committee (an administrative layer above the village GPs) members were female SHG members, village motivators, or Vulnerable Group activity presidents (ICR, Table A2.10).

- Communication activities through the media started in February 2004 and focused on raising awareness in targeted GPs on the UNWDP’s objective and participatory approach. The newsletters, in particular, facilitated learning and technical knowledge sharing among GPs, in addition to exposure visits. The project website (http://wmduk.gov.in/index.html) was set up and provided comprehensive information on implementation.

#### Outcomes

- The survey for the Final Impact Evaluation showed that on average 79 percent of total families in a Gram Panchayat have been involved in the participation of GP Watershed Development Plans

- Gramya and SLEM projects supported almost 11,300 vulnerable persons with enterprise development training and a one-time grant to enhance income generation activities at a total cost of about $1.6 million. Overall, women comprised 54 percent of the Vulnerable Group fund beneficiaries (ICR, page 38) - reflecting equitable participation.

- In the SLEM 125 GPs prepared and ensured participation by the poorest of the poor and socially marginalized groups in 20 Gramya I micro-watersheds (ICR, paragraph 1.6.1)

- Pine needle briquetting was initiated by Gramya I and scaled up by the SLEM. In the targeted GPs located near pine forests, 665 briquette-making machines were acquired and some 6,600 women were trained to operate them (ICR, page 36) - reflecting empowerment of women.

- Building on the 33 ha bamboo plantation financed under Gramya I, 15 self help groups (77 beneficiaries - 31 percent being women) used Vulnerable Group Funds for bamboo basket making. Local controlled
harvests of native bamboo for basket making contributed to preservation of age-old basket weaving traditions and value addition (ICR, page 38) - and reflected equitable participation by all groups.
- Based on the evidence "Socio-economic equity was a cornerstone of this project " (Summary of Borrower's ICR, page 57).
- "Works in both the projects were carried out in participatory mode; employment opportunities were created within the village, women were made self-reliant through formation of self-help groups and by providing work opportunities within the village" (Report of Stakeholder Workshop, ICR, page 56).

5. Efficiency:

The PAD made no direct assessment of the likely economic rate of return (ERR) from this project. As a proxy it referred to the Integrated Watershed Development Project (IWDP II) which preceded this project and noted that "ERRs ranging between 38 percent and 95 percent for irrigation tanks and channels, and between 15 percent and 21 percent for water harvesting tanks. In all cases, this exceeds the current consensus opportunity cost of capital which is 12 percent" (page 55). Based on the IWDP II the PAD estimated the expected ERR for UDWD as a whole at appraisal to be 15.7 percent.

The ICR noted the wide range of project beneficiaries and hence the many enterprises that contributed to total project benefits. It concluded, based on estimated economic benefits from all the major enterprises financed by the project, that the ERR for the project as a whole was 16.7 percent and that the project's net estimated present value (assuming an opportunity cost of capital of 12 percent and 30-year project life) was Rs 1.8 billion (ICR, page 51) equivalent to $36 million. The ICR prepared by the Borrower calculated the project's ERR to be 18.5 percent (ICR, page 61).

Efficiency is therefore evaluated as substantial

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* Refers to percent of total project cost for which ERR /FRR was calculated.

6. Outcome:

Relevance of the project's objectives and its design were respectively high and modest. Efficacy was substantial because all the project's objectives were achieved or are expected to be achieved. Finally, efficiency was also substantial. Hence the project's overall outcome is rated as satisfactory.

a. Outcome Rating: Satisfactory

7. Rationale for Risk to Development Outcome Rating:

A core feature of the project was its multi-sectoral approach with considerable community participation across many sectors such as watershed development, rural development, forestry, agriculture, horticulture, and livestock sectors (see ICR para 3.1.2). Production and income risks were therefore spread among the different enterprises and may have reduced income variability. This characteristic contributed to the project's sustainability.

In addition, costs were shared and hence the beneficiaries have an incentive to maintain water harvesting structures and other investments in improved productivity. The ICR also noted that a "Government Order was issued in December 2011 to hold GPs accountable for sustainability of the assets created by Gramya I and the SLEM, such as water harvesting structures and livelihood activities by vulnerable groups. The water user groups will maintain the water harvesting structures, because of their own investment through "cost sharing" (ICR, paragraph 4.1). Hence there are substantial pressures on various stakeholders to sustain the development outcomes from the project.

The ICR drew attention to the fact that there remains a need for technical support to Farmer Interest Groups.
(FIGs) and agribusinesses to improve their institutional capacity and ensure their economic sustainability (paragraph 4.2). Some farmer federations were not fully operational when the project closed but it was planned that the project's next phase (Gramya II) would continue to build farmers' organizations. Technical support in the project was widely acclaimed at various levels and stimulated the preparation of the state government's "Perspective and Strategic Plan 2009-2027", which aims to develop 537 micro-watersheds by 2027. This plan established a framework for the second phase of UDWDWP and also a participatory watershed development component in the IFAD funded Integrated Livelihood Support Project (ILSP) (see ICR, paragraph 5.2.1 and Annex 7, Comments by the State of Uttarakhand/Watershed Management Directorate).

a. Risk to Development Outcome Rating : Moderate

8. Assessment of Bank Performance:

a. Quality at entry:

The ICR noted that the Bank team incorporated lessons learned from previous relevant Bank supported projects in Uttarakhand and that it supported the State Government’s focus on decentralization and agribusiness through strengthening the administrative capacity of the GPs through participatory watershed development planning and implementation. The project also stimulated agribusiness in association with the increased water availability for crop production resulting from watershed development which led, with the support of extension services and the engagement of NGOs at the district level, to substantial improvements in income for farmers and communities. This was a strategically relevant project design.

While the project's design was sound, it was complex because it involved thousands of geographically dispersed and remote farm households. Implementation was achieved by strengthening the GPs and various farmer organizations, and obtaining the support of a number of NGOs to facilitate implementation. The project also benefitted from far-sighted arrangements for the close participation of numerous stakeholders including the mobilization of village based groups and the expanded role of women in implementing the Gram Panchayat water development plans in the agriculture, horticulture, livestock and service sectors.

The project was administratively ready for implementation with agreed staffing and advanced arrangements for fiduciary management. However, a few key performance indicators were over ambitious and many were poorly defined at appraisal. In addition the project's original funding envelope was inadequate. These factors resulted in a significant restructuring in 2011 which included additional financing and amendments to the results matrix.

Quality-at-Entry Rating : Moderately Satisfactory

b. Quality of supervision:

As the ICR mentions, considerable additional technical support for the project was provided during supervision by the Delhi based Bank team on social mobilization and institution development, water management, irrigation, forestry, agriculture, financial management, procurement, and safeguards. This was clearly successful for this quite complex project (paragraph 5.1.2). The Bank's support, including at the time of the MTR and changes in the results matrix, was acknowledged by the Indian Government, the Uttarakhand state government, and the Watershed Management Directorate (ICR, pages 64 and 72).

The emphasis on the participatory approach was maintained and strengthened through the social accountability tools, such as participative monitoring and evaluation (PME). Through its support to the Water Management Directorate (WMD) the Bank team also sought to achieve a balance between, on the one hand participative approaches and the promotion of new technologies in watershed development, and on the other hand the collection of data on outcomes and the analysis of hydrological issues and related technical issues in the project (ICR, paragraph 5.1.2).

The Bank team also supported scaling-up the project by mobilizing the GEF grant for SLEM which introduced an innovative pilot to enhance the mitigation of and adaptation to climate change in the mountain ecosystems (ICR, paragraphs 5.1.2 and 5.1.3).

Quality of Supervision Rating : Satisfactory
9. Assessment of Borrower Performance:

a. Government Performance:

The ICR states that the Government of Uttarakhand (GoUk) was highly committed to Gramya I and to SLEM. It showed strong ownership of the project providing considerably more counterpart financing than agreed at appraisal (paragraph 5.2.1). Annex 1(b) of the ICR shows that the additional counterpart funding was about US$5.4 million or 32 percent above the original commitment of $16.62 million. The GoUk prioritized adequate staffing of a multi-disciplinary team at WMD by enabling secondments from relevant departments, despite an overall manpower shortage in the state. Also, in support of Gramya I and SLEM implementation and their sustainability, GoUk issued two Government Orders, which (a) allowed Van Panchayats to manage plantations and natural resource conservation in reserve forests and (b) ensured the responsibility of the maintenance of the assets created by these projects (ICR, paragraph 5.2.1).

Government Performance Rating: Satisfactory

b. Implementing Agency Performance:

WMD (the implementing agency) was effective in implementing this project. Based on its experience implementing the Integrated Watershed Development Hills II project before Gramya I, the WMD contracted ten NGOs to facilitate project management, GP mobilization, and the agribusiness pilot. It also used its experience and dedicated project staff at the state and division levels to ensure that stakeholder staff at the village and GP levels (e.g. women village motivators and youth account assistants), were adequately trained in the project’s concept and activities. Despite the complex project design and the additional SLEM project, there was clarity among the WMD staff on project implementation. WMD also initiated and scaled up the innovative alternative livelihood activities by reviving local traditions with improved technologies, such as pine needle briquetting, gharat, and bamboo basket making. These activities were in line with mitigating and adapting to climate change and provided opportunities to WMD to improve its capacity in this important emerging subject area (ICR, paragraph 5.2.2).

Implementing Agency Performance Rating: Satisfactory

Overall Borrower Performance Rating: Satisfactory

10. M&E Design, Implementation, & Utilization:

a. M&E Design:

The WMD included a six member team responsible for initiating and coordinating ongoing monitoring of project implementation and the conduct of impact evaluation studies headed by the WMD’s Deputy Project Director. In addition to the internal monitoring an external agency (The Energy and Resources Institute - TERI) was contracted to carry out a baseline survey, mid-term assessment and final evaluation. TERI also conducted an impact study of the project. While the revised results framework was used as a basis for monitoring the project's progress, the ICR commented that more direct monitoring of "key physical outcomes in water source treatment and sustainability by measuring increase in water discharge rate and stream flow duration, and in area under irrigation" could have captured more "science aspects of water shed development" (paragraph 2.3.1). Measurement of these results could have contributed to a more comprehensive assessment of the achievement of the vegetative and biomass index.

b. M&E Implementation:

The key physical outputs and outcomes were regularly monitored through WMD’s well established management information system (MIS), and these were reported to every Bank mission. During Gramya I implementation, the MIS was enhanced at the divisional level to track progress in watershed development and implementation, area
under treatment (including irrigation), production and productivity of rainfed and irrigated crops, value addition and marketing. However, Annex 3 of the ICR in light of a review of the Final Impact Evaluation of the project prepared by TERI, it was concluded that "the quality of the impact evaluation survey instruments and data analysis proved to be inadequate to capture the project intervention specific benefits" (ICR, page 43). This occurred because the impact evaluation restricted its analysis to the sample data and which did not include information on some parameters needed for the economic analysis to assess the project's overall efficiency. Supplemental field visits were therefore used to obtain additional data on project benefits and costs for the project's economic analysis.

c. M&E Utilization:

The state Steering Committee was mandated to generate requests for periodic evaluative studies either to feed into the ongoing implementation process or for proposing broader policy changes. Studies included: the response from communities to various cost sharing norms; the process and constraints of working on forest land, motivation and incentive systems for common pool resource management, performance of new technologies, and GP capacity.

According to the ICR the information derived from the M&E system and reports by TERI were used to update the results framework - in particular for measuring many project outcomes, and preparing case studies, good practice notes and various reports, including the Bank and state government ICRs. The results and outcomes of Gramya I and SLEM were widely disseminated to stakeholders at the GP, division, and state level governments (paragraph 2.3.2).

M&E Quality Rating: Substantial

11. Other Issues

a. Safeguards:

The project was Category B for environmental risks and triggered five safeguard policies: environmental assessment (OP 4.01), natural habitats (OP 4.04), pest management (OP 4.09), indigenous peoples (OP 4.20), and forests (OP 4.36). The project was in full compliance with these policies during implementation.

The Environmental and Social Management Framework (ESMF), integrated pest management (IPM) strategy, and Transhumant Action Plan were prepared and disclosed in February 2004. In addition, the project also developed guidelines for the disposal of polyethylene used in the project, and for waste management at processing centers (ICR, paragraph 2.4.1).

GPUs used safeguard checklists in selecting and implementing sub-projects at the village level. According to the ICR the project trained 23,977 community leaders and stakeholders in the 468 Gram Panchayats covered by the project on the ESMF guidelines and checklists, as a part of project orientation. The safeguard compliance was monitored for all Gramya I and SLEM sub-projects by WMD division offices. The checklists were also used by the Government of India-financed Integrated Watershed Management Program and the livelihoods and local institution development project supported by the International Fund for Agriculture Development (ICR, paragraph 2.4.2).

The Transhumant Action Plan supported sedentary or semi-sedentary transhumant communities migrating through or residing in the targeted GPs. This represented about 6.5 percent of the total Gramya I target population (ICR, paragraph 2.4.4).

b. Fiduciary Compliance:

Financial Management. The overall accounting and reporting system was functional at the state, division, and district levels throughout Gramya I and SLEM implementation. The project submitted interim unaudited financial reports on time. The external audit reports were also submitted (albeit with some delays) and were clean in all cases (ICR, paragraph 2.4.5). Financial management is rated satisfactory.

Procurement. GPs executed about 80 percent of procurement under the project. Although the amount per transaction was rather small, the sheer quantity of transactions across the 468 GPs had the potential for substantial risk. WMD therefore produced a Community Procurement Manual during project preparation, and
trained women village facilitators and other GP members on its contents. For the GP investments, such as water harvest structures, the procurement was conducted and closely monitored by the water user groups. For the larger public goods, such as roads and bridges, GP members monitored the procurement through PME. WMD conducted the remaining 20 percent of procurement, including large contracting of the partner non-government organizations (PNGOs) and facilitating non-government organizations (FNGOs). Some delays in procurement of PNGOs occurred but did not impact overall implementation significantly (ICR, paragraph 2.4.7). Procurement management is rated satisfactory.

c. Unintended Impacts (positive or negative):
The ICR noted three positive unintended impacts.

**Food Security and Nutrition**: Because of the introduction of high value vegetable crop production, beneficiaries had better food security and nutrition even among vulnerable households, and reverse migration (back to the project area) was observed in some project GPs. However no quantitative information was available on these matters (ICR, paragraph 3.5.11).

**Broader Benefits from Improved Farming Practices**: It was observed that improved farming practices demonstrated by Gramya I were replicated by farmers in non targeted GPs (ICR, paragraph 3.5.11).

**Climate Change Benefits due to Diversification**: The project provided climate change mitigation and resilience co-benefits, by inducing crop diversification and introducing locally relevant and appropriate technologies, like pine needle briquette production (ICR, paragraph 3.5.12).

d. Other:
None

<table>
<thead>
<tr>
<th>12. Ratings:</th>
<th>ICR</th>
<th>IEG Review</th>
<th>Reason for Disagreement /Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Outcome:</strong></td>
<td>Satisfactory</td>
<td>Satisfactory</td>
<td></td>
</tr>
<tr>
<td><strong>Risk to Development Outcome:</strong></td>
<td>Moderate</td>
<td>Moderate</td>
<td></td>
</tr>
<tr>
<td><strong>Bank Performance:</strong></td>
<td>Satisfactory</td>
<td>Moderately Satisfactory</td>
<td>Quality at entry was rated as moderately satisfactory because of shortcomings in the results matrix and the inadequate project funding. On the other hand the quality of supervision was rated as satisfactory. Consistent with the harmonized criteria agreed between IEG and OPCS overall Bank performance is rated as moderately satisfactory.</td>
</tr>
<tr>
<td><strong>Borrower Performance:</strong></td>
<td>Satisfactory</td>
<td>Satisfactory</td>
<td></td>
</tr>
<tr>
<td><strong>Quality of ICR:</strong></td>
<td>Exemplary</td>
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**NOTES**:  
- When insufficient information is provided by the Bank for IEG to arrive at a clear rating, IEG will downgrade the relevant ratings as warranted beginning July 1, 2006.  
- The "Reason for Disagreement/Comments" column could cross-reference other sections of the ICR Review, as appropriate.

13. Lessons:  
The ICR lists four solid lessons, namely  

(a) Fiscal decentralization and community empowerment are necessary but not sufficient to promote improved community management of natural resources.
(b) Science and cutting-edge technology in hydrology cannot be overemphasized: watershed development should balance participation and science in its design and implementation.

(c) Watershed development projects are a relevant response to the needed increase in rainfed agricultural productivity in India. However, more attempts must be made to quantify costs and benefits relative to alternative interventions.

(d) Revival of traditional energy sources such as briquette making from pine needles, can address climate change mitigation, boost resilience and contribute to livelihoods.

Two additional lessons could be added.

(a) The benefit from using a simple and sound project design, especially one that involves a large number of implementing agencies. The model used in this project, in which implementation was entrusted to numerous levels of authority from remote Gram Panchayats to state ministries had been tested already in earlier projects and found to be well suited to the circumstances in India's mountainous areas.

(b) The high value of sound M&E. Well planned and executed design, implementation and utilization of the M&E system is important to the efficiency of any project, but particularly for a project involving many implementing organizations at the micro level.

14. Assessment Recommended? [ ] Yes [ ] No

15. Comments on Quality of ICR:

This was an exemplary ICR which provided a balanced assessment of the project's results. The main text of the ICR was results oriented, well written. It was consistent with OPCS guidelines and candid with high quality information and argumentation based on the project's M&E system and an impact evaluation. The ICR collected supplementary information that was missing or lacked robustness in the impact evaluation, but it could have spelled out in greater detail the shortcomings of the existing information and the methodology used for the supplementary data. Lessons drawn from the project were relevant to similar projects. Those annexes which provided the views of stakeholders and the Borrower's ICR were illuminating and useful.

a. Quality of ICR Rating: Exemplary