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# Combined Project Information Documents / Integrated Safeguards Datasheet (PID/ISDS)

Appraisal Stage | Date Prepared/Updated: 18-Dec-2017 | Report No: PIDISDSA22567



**BASIC INFORMATION**

**A. Basic Project Data**

Country India	Project ID P160408	Project Name Maharashtra Project on Climate Resilient Agriculture	Parent Project ID (if any)
Region SOUTH ASIA	Estimated Appraisal Date 07-Nov-2017	Estimated Board Date 30-Jan-2018	Practice Area (Lead) Agriculture
Financing Instrument Investment Project Financing	Borrower(s) Republic of India	Implementing Agency Department of Agriculture, Government of Maharashtra	

Proposed Development Objective(s)

To enhance climate-resilience and profitability of smallholder farming systems in selected districts of Maharashtra.

Components

Comp. A: Promoting Climate-resilient Agricultural Systems

Comp. B: Climate-resilient Post-harvest Management and Value Chain Promotion

Comp. C: Institutional Development, Knowledge and Policies for a Climate-resilient Agriculture

Comp. D: Project Management

**Financing (in USD Million)**

Financing Source	Amount
Borrower	179.55
International Bank for Reconstruction and Development	420.00
<b>Total Project Cost</b>	<b>599.55</b>

Environmental Assessment Category

B - Partial Assessment

Decision

The review did authorize the preparation to continue



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Other Decision (as needed)

## B. Introduction and Context

### Country Context

- 1. India is one of the fastest growing economies in the world**, ranked among the top ten highest GDP countries, and is the world's second most populous country. During the past two decades, India's GDP grew at an average of 7 percent annually. Poverty incidence declined on average by 1.5 percentage points per year during 2005–10 and improvements in key development indicators have been remarkable. However, following years of impressive economic growth and poverty alleviation, India is now at a critical juncture in its paths towards becoming an economic powerhouse and is facing important development challenges and structural constraints to a more inclusive growth and a more sustainable development. India remains home to 263 million poor people (most of which reside in rural areas) living on less than US\$1.90/day and the economic growth has not generated jobs fast enough to absorb labor out of agriculture and low productivity rural jobs. To address these challenges, the Government of India (GoI) has in recent years focused on accelerating economic growth and poverty reduction, creating jobs, improving environmental management – and achieving an annual growth in the agriculture and allied rural sectors of 4 percent; in its Union Budget, 2017-18, GoI articulated its resolve to double farmers' income in 5 years.
- 2. Climate change is impeding socioeconomic development within India** and increasing investment in adaptation measures to reduce vulnerability is essential to maintaining economic growth. India's rapid growth has increased its prominence on the global stage and drawn attention to its climate mitigation and adaptation efforts. The country has shown leadership in global efforts to limit climate change and is among the early countries to have ratified the Paris Agreement on Climate Change (in October 2016). Analyses of the country's historic climate data support the extent of the change taking place: an increase in mean annual temperature (0.56°C between 1901 and 2007), as well as a decrease in seasonal mean rainfall with more frequent extreme rainfall events. Looking ahead, temperatures are projected to increase further and at a faster rate than before (by 1.7-2.0°C by the 2030s), coupled with an overall increase in monsoon rainfall (with an increase in geographic variability) and extreme precipitation events (with an increase in rainfall intensity)<sup>1</sup>. India shows an increasing trend in its per capita emission of GHGs, though current per capita levels are still among the lowest in the world (2.44 tCO<sub>2</sub> equivalent per capita in 2012, against global average of 5.5 tCO<sub>2</sub> equivalent). In absolute terms, India remains one of the largest GHG emitters, with its agriculture sector the second largest contributor (around 18 percent of the country's total GHG emissions).

<sup>1</sup> Details of historical climate trends and future climate scenarios for India can be found on the World Bank's Climate Change Knowledge Portal at: <http://sdwebx.worldbank.org/climateportal/countryprofile/home.cfm>



3. **Agriculture sector growth is essential in achieving India's development goals:** the sector currently accounts for 14 percent of national GDP and is a source of livelihood for more than half of the population. More than two thirds of the country's poor live in rural areas, and their chance of getting out of poverty directly depends on the performance of agriculture and allied rural sectors. The success of ongoing massive rural-urban transformation will also depend on improved connectivity of rural areas to cities, enhanced agriculture productivity and value chains for agricultural products and off-farm job creation in rural areas, which would temper down current massive migrations to urban areas. The agriculture sector also has a major potential for reducing GHG emissions and improving environmental management through enhanced soil and water conservation and climate-resilient farm management practices.
4. **Over the past two decades, the agriculture sector has performed below its potential** and has not yet met the envisaged growth targets. In the 1990s and 2000s, the annual agriculture growth rate was around 3-3.5 percent, and dropped even below 2 percent per annum during 2013-15, due to low productivity, growing water and land scarcity, rising labor costs, and declining international commodity prices, exacerbated by the late onset of monsoon rainfall and increase rainfall intensity. While overall rainfall is projected to increase, its distribution over time and space is likely to become much more erratic, thereby leading to increasingly frequent droughts and floods. Unless significant efforts to capitalize on the projected increase in rainfall are made to improve water conservation and soil moisture management, water scarcity at farm level will remain a key impediment to achieving higher levels of crop and water productivity.
5. **Going forward, five inter-related and strategic shifts are required to achieve the 4 percent annual growth target set by GoI for agriculture** and transform the sector into a modern food system: (i) a shift away from food grain production targets towards diversification into high-value horticulture and livestock products; (ii) a shift away from pure focus on physical productivity (yields) towards resilience and stability of agriculture to deal with the effects of climate change and short-term weather anomalies; (iii) a shift away from a focus on on-farm production towards value addition in the post-harvest segments of the food value chains; (iv) a shift away from a calorie focused production structure towards nutrition sensitive agriculture, and (v) a shift away from increasing irrigation water supply towards improved water use efficiency. The proposed project is designed to directly contribute to this structural transformation process by supporting several of those strategic shifts with a focus on building climate resilience in the agriculture sector in the districts of the State of Maharashtra that are most vulnerable to climate change.

#### Sectoral and Institutional Context

6. **The State of Maharashtra is one of the economic growth engines of the country:** it is the top-ranked state in terms of contribution to the national GDP (14.4 percent, 2014-15) and has witnessed an average economic growth rate of over 8 percent per annum over the last decade. With 9.3 percent of country's population and 9.4 percent of the country's geographic area, Maharashtra is also the second largest state in India. Structurally, Maharashtra is more urbanized and industrialized compared to the rest of the country and economic contributions of the industries and of the services sectors are much larger than that of agriculture and allied sectors (which account for only 11 percent). However, the agriculture sector remains central to Maharashtra's economic and political landscape, and growth in the sector is critical for the state as over 50 percent of its population depends on agriculture.



7. **In Maharashtra, agriculture has grown at an annual average of 6.4 percent from 2004-05 to 2011-12**, but growth in the sector fluctuates heavily and is depending on highly erratic rainfall during any particular year and rainfall variability over time. The distribution of rainfall is highly uneven within the state and ranges from over 4,000 mm per annum in coastal areas to less than 400 mm in some of the most arid districts. Agriculture remains the highest user of freshwater, withdrawing more than 80 per cent of the surface and groundwater (“blue water”) available to the state. Since the continuation of the State’s strong economic growth performance would have to be supported by higher water availability in all three sectors of the economy, there is a need for Maharashtra to better manage its water resources and in particular to enhance the efficiency of the water used for agriculture and focus on increasing the availability and use by the agriculture sector of “green water” (rainwater stored in the soil as soil moisture). Severe consecutive droughts experienced in large parts of Maharashtra in recent years have considerably affected the state’s agricultural performance and social fabric in rural areas, and have prompted the highest-level state authorities to declare “drought-proofing” of agriculture a key development priority for Maharashtra.
8. **Maharashtra’s agriculture is dominated by small and marginal farmers with an average farm size of 1.44 ha.** Most of the agricultural production is rain-fed, with less than 20 percent of the arable land under irrigation. Farmers’ annual production covers two seasons: *kharif* crops planted at the onset of the monsoon rainfall and *rabi* crops planted at the beginning of the winter season. Crop production is dominated by food grains, i.e. cereals (mostly rice, sorghum or *jowar*, maize) and pulses (chickpea or *gram*, pigeon pea or *tur*). For oilseed crops, soybean remains by far the most important commodity. Since 2000, the area under cultivation for cereals (particularly sorghum) has declined and a shift from food grains towards cash crops has been observed, notably cotton and sugar cane whose production is relatively water-intensive. In the last decade, a production diversification towards high-value horticulture crops has been observed, and today, the State of Maharashtra has emerged as one of the country largest producers of fruits (mango, citrus, grapes, pomegranate) and vegetables (onion, tomato).
9. **Overall, crop productivity has increased over time but remains at relatively low levels.** In 2013-14 (non-drought year), yields for major crops were as follows: sorghum 814 kg/ha; soybean 1,214 kg/ha; cotton 361 kg/ha. Yield gaps for several key crops are still significant, reflecting the need for a mix of sector policies and investments to promote research on climate-adapted varieties, irrigation for a more efficient on-farm use of water, and extension services for the adoption of climate-resilient agronomic practices and technologies – i.e. for building climate resilience in Maharashtra’s farming systems.
10. **In 2008, GoI released the National Action Plan on Climate Change (NAPCC)**, and directed the States to develop State Action Plans on Climate Change guided by and consistent with the structure and strategies of the NAPCC. The GoM took a pioneering step towards formulating the Maharashtra State Adaptation Action Plan on Climate Change (MSAAPCC) by commissioning a comprehensive vulnerability assessment study which included the task of generating model-based climate projections specific to the State’s geography<sup>2</sup>. The MSAAPCC seeks to address the urgent need to

<sup>2</sup> The Energy Resources Institute, TERI (2014): *Assessing Climate Change Vulnerability and Adaptation Strategies for Maharashtra: Maharashtra State Adaptation Action Plan on Climate Change (MSAAPCC)*. Department of Environment, GoM.



integrate climate change concerns into the State's overall development strategy, thus assisting in building long term climate resilience and enabling adaptation to the likelihood of risks arising from climate change.

11. **The MSAAPCC climate modelling results show that the annual mean temperature in the project area to increase by around 1.3-1.5°C by the 2030s;** the projected increase in monsoon rainfall by the 2030s ranges from 13-30% across the project area, but distributed over a shorter number of rain days. The analysis of weather and production data in Maharashtra reveals that a rise in mean temperature in the range of 1 to 2.3 degree Celsius results in a 6.3 to 17.5 percent decline in sorghum yield; while an increase of 1 to 4 degree Celsius results in a reduction in soybean yield of 11 to 36 percent. Given that most of the agriculture in the project area is rainfed, crop production is highly correlated with rainfall: in 2014, when annual rainfall was 25 percent above the annual average, total crop production across the state reached 23.8 million mt; in the drought year 2015, when precipitation was more than 40 percent below annual average, crop production collapsed to 10.0 million mt. These analytical findings from the MSAAPCC are consistent with the findings of the Fifth Assessment Report of the IPCC. The effects of these longer-term climate trends on sectors like agriculture or water, effectively signaling a shift in climatic conditions, will be further aggravated by the projected increase in the frequency of extreme climate events (droughts, hailstorms, floods, delays in the onset of monsoons, higher rainfall intensity).
12. **The project will be implemented in about 4,000 villages highly vulnerable to climate variability, and another 1,000 villages additionally affected by high levels of soil salinity.** Most of the 15 project districts (totaling over 18,700 villages, 12.5 million ha arable land, and 25.5 million people) are within the Marathwada and the Vidarbha Division located in the central part of the state). The villages in the saline tract of the Purna river basin are located in the northern part of the project area. Agricultural production in the project area is largely smallholder-based, rainfed and highly vulnerable to climate variability: in 2014 and 2015 (severe drought years), Marathwada Division received over 40 percent less rain compared to its long term historic annual average. The selection of the villages has been finalized by the GoM during preparation; it is based on a rigorous multi-criteria analysis and takes into account the climate change vulnerability approach adopted by the Central Research Institute for Dryland Agriculture (CRIDA) a National Research Institute under the Indian Council of Agricultural Research (ICAR). Under this approach endorsed by the Intergovernmental Panel on Climate Change (IPCC), climate vulnerability is defined as a function of exposure, sensitivity and adaptive capacity.
13. **The GoI has designed a number of policy initiatives and programs** aligned with the recommendations from the NAPCC program and the state-level action plans, including the National Initiative on Climate Resilient Agriculture (NICRA) to promote the development of climate-resilient villages; the *Pradhan Mantri Krishi Sinchayee Yojana* (PMKSY) Program to promote efficient irrigation practices and improve water use efficiency; the *Jalyukt Shivar Abhiyan* (JSA) Program on watershed and drought management; the Integrated Watershed Management Program (IWMP) on natural resources conservation; as well as India's Intended Nationally Determined Contribution (INDC) as presented to the COP21 in Paris to address the adverse effects of climate change. Against this background, the GoM is committed to further support and implement those policies in Maharashtra and sees the proposed project as an opportunity to contribute to the implementation of policies in support of the climate agenda.





14. **Higher level authorities in the state of Maharashtra have recently embraced a new paradigm for the agricultural sector** which now needs to be mainstreamed across institutions and stakeholders. It is built around the recognition and understanding of climate change and climate variability as the “new normal”; this in turn, requires a structural shift in the approach to sustainable agriculture growth based on longer-term adaptive interventions (reforms, investments, capacity development) to build climate-resilience in agriculture – in addition to focusing primarily on shorter-term emergency responses to recurring natural disasters. The World Bank Group is very well placed to provide value-added support to the GoM in establishing this new paradigm through its global experience with climate-resilient agriculture, its capacity to work multi-sectorally, and to apply cutting-edge knowledge at scale in support of changes in policies and strategies to promote climate adaptation and mitigation, and generate climate co-benefits.
15. **Aligned with this new paradigm, the PoCRA project seeks to enhance the capacity of farming systems in the most climate vulnerable districts of Maharashtra to better cope with the impact of extreme climatic events.** In recent years, climate variability has seriously affected agriculture in Maharashtra, where farming is dominated by smallholders and characterized by low crop productivity and a high dependence on rainfall. Short term emergency responses by the GoM to the severe droughts that occurred in the past few years have had a limited impact on agriculture performance increase, and could not prevent a further deterioration of the social fabric in rural areas (outmigration to urban centers, high rate of farmer suicide). Against this background, the project will promote short and longer term solutions for farming systems, commodity value chains and rural institutions, that reduce the negative effect of climate disturbances on various stakeholders and strengthen their capacity to recover from such climatic events. The technology packages, agronomic practices, and targeted investments promoted by the project to improve climate resilience in agriculture, will help enhance water productivity and water-use efficiency, increase soil health and carbon sequestration, and improve crop productivity. The short and longer term solutions proposed under this project are expected to contribute to the GoM and GoI stated priorities of “drought-proofing” agriculture in Maharashtra and doubling farmer income.

### C. Proposed Development Objective(s)

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Development Objective(s) (From PAD)

To enhance climate-resilience and profitability of smallholder farming systems in selected districts of Maharashtra.

Key Results

16. The following Key Performance Indicators (KPI) are proposed for measuring the core outcomes of the project:
- (a) KPI #1 - Resilience: Increased water productivity at farm-level (i.e. agricultural output/water use)



- (b) KPI #2 - Resilience: Improved yield uniformity and stability (i.e. across time and space)
- (c) KPI #3 - Resilience: Net greenhouse gas emissions [CRI]
- (d) KPI #4 - Profitability: Farm income, by gender (ratio with/without project)
- (e) KPI #5 - Direct beneficiaries: Farmers reached with agricultural assets or services, by gender [CRI]

#### D. Project Description

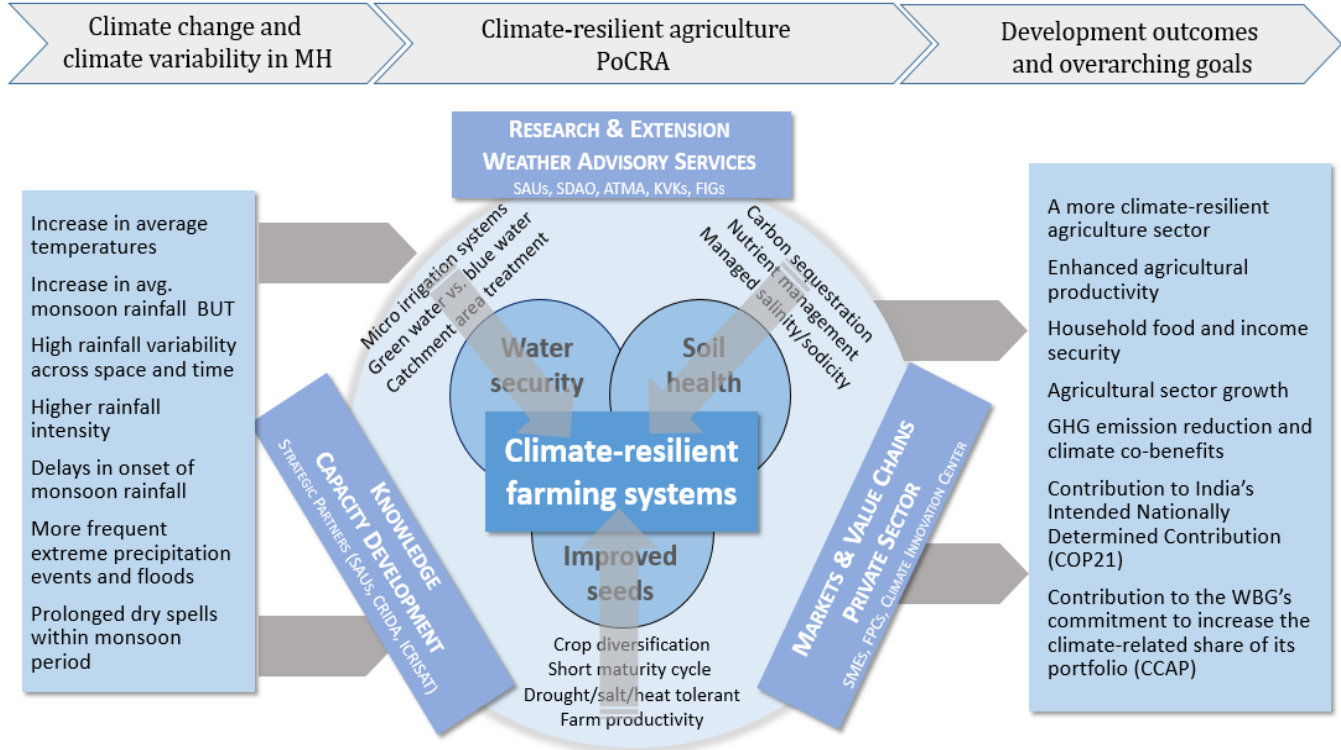
17. **Project rationale.** In support of the state government's shift towards a new paradigm that puts climate resilience at the core of agriculture growth and rural development in Maharashtra, the project seeks to: (i) introduce transformational changes in the agriculture sector by promoting short-term solutions at farm and catchment level, (ii) and provide longer term solutions at institutional and policy level to ensure the sustainability of the outcomes generated in the field. This two-tier approach is reflected in the project design; it ensures that investments promoted by the project and efforts to reduce stakeholders' climate vulnerability (specifically their capacity to mitigate the impact of adverse climate events and/or to recover from climate disturbances), contribute to both dimensions of the PDO, i.e. increasing climate resilience in agriculture while ensuring that smallholder farming remains a financially viable activity.
18. **Project overview.** To enhance the adaptive capacity of farming systems, the project promotes the transfer of already proven and field-tested agricultural technologies and agronomic practices that enhance climate resilience at farm and catchment level (shorter term solutions). To increase the absorptive capacity of commodity value chains for crops relevant to the climate agenda, the project strengthens Farmer Producer Companies (FPCs) and supports the seed supply chain for climate-resilient crop varieties. Finally, to improve the transformative capacity of institutions in rural areas, the project supports the mainstreaming of climate resilience in rural institutions as well as the generation and transfer of cutting-edge knowledge on climate change and its impact on key sectors (e.g. agriculture, water) in order to provide strong analytical underpinnings for strategies and policies on climate adaptation and mitigation (longer term solutions).
19. **Achieving climate resilience at farm level through triple-win solutions.** Based on India's experience with other initiatives supporting agriculture adaptation to the changing climate, and the Bank's global experience with climate resilience in agriculture, the project, as represented in Figure 1 below, is built around a comprehensive, multi sector approach that focuses on building resilience in agricultural production systems, while generating the following interdependent triple win solutions:
- (a) *enhanced water security at farm level* - through the adoption of technologies for a more productive and efficient use of water for agriculture, and the increase in water storage capacity (surface and sub-surface) and improvement in water distribution structures to address on-farm water availability and reduce the risks associated with intra- and inter seasonal climate variability;
  - (b) *improved soil health* - through the adoption of good agricultural practices to improve soil fertility, soil nutrient management, and promote soil carbon sequestration; and
  - (c) *increased farm productivity and crop diversification* - through the adoption of climate-resilient seed varieties (short maturity, drought and heat resistant, salt tolerant) and





market-oriented crops with a clear potential for income security derived from the integration of smallholder FPCs in emerging value-chains.

Fig. 1: Strategic Overview, Thematic Linkages and expected Achievements of the PoCRA



### A. Project Components

20. **Component A – Promoting Climate-resilient Agricultural Systems** (US\$ 320.32 million): The objective of this component is to strengthen the **adaptive capacity of small and marginal farmers** to adjust and modify their production systems to moderate potential future impacts from climate events. The component builds climate-resilience in agricultural production systems through a series of activities at farm level, complemented by interventions in catchment areas. Mini Watershed Plans will be developed in early stages of implementation to provide a roadmap for the implementation of project activities in the field and for investment priorities.

21. This component focuses on: (i) scaling-up the adoption by farmers of climate-resilient agricultural technologies and farming practices aimed at improving soil health, water-use efficiency and crop productivity, including in the areas affected by high salinity levels; and (ii) catchment area treatment to promote a more efficient use of surface water for agriculture, complemented with a more sustainable use of groundwater, and ultimately improve the availability and quality of water at farm level. This component contributes directly to the PDO by promoting the transfer of climate resilient technologies aimed at: improving water-use efficiency and water productivity at farm level (KPI #1); reducing climate vulnerability in crop production (KPI #2); and scaling up the adoption by smallholders of agronomic practices and agricultural technologies proven to enhance



climate resilience in farming (KPI #3).

22. To complement these on-farm activities, this component also supports investments in catchment areas to prioritize the use of surface water and improve the sustainable management of groundwater resources for agriculture. On-farm activities and catchment area treatment will be derived from science-based, village-level watershed plans (with rigorous water budgeting) to be developed in a participatory manner and aggregated to form a Mini Watershed Plan for each of the 790 PoCRA clusters. Subsequent investments to enhance climate-resilience in agriculture are captured in the corresponding Cluster Development and Investment plan.
23. **Component B – Post-harvest Management and Value Chain Promotion** (US\$ 38.45 million): The objective of this component is to support the integration of smallholder Farmer Producer Companies (FPCs) in value chains for crops relevant to the climate agenda, and to strengthen the supply chain for climate-resilient crop varieties in the project area. The component will develop the **absorptive capacity of stakeholders in selected commodity value-chains** to prepare for and help recover from negative impacts of climate events. The component supports activities that enhance climate resilience beyond farm gate and provide end-to-end solutions in value chains for agricultural commodities selected for their contribution to climate-resilient farming.
24. In line with GoM priorities, this component focuses on Farmer Producer Companies (FPCs) as major drivers of change in the agri-food system. An increase in farm income remains the key determinant of change and a pre-requirement for the adoption of the climate-resilient technologies and good agronomic practices promoted under Component A. Thus, this component directly contributes to the PDO by creating opportunities for increasing the revenue of small and marginal farmers (KP #4) through crop diversification and their participation through FPCs in selected value chains. To ensure successful crop diversification, the component helps: (i) develop smallholder-inclusive value chains for climate-resilient commodities, and (ii) overcome constraints in the seed supply chain and address shortages in the availability of stress-resistant seed varieties.
25. Activities under this component help to build the capacity of some of the 434 registered FPCs in the PoCRA districts to upgrade from the current business model of “aggregators” (for the sale of most common, high-volume low-return, staple food commodities, as well as the bulk purchase of agricultural inputs) to growth-oriented agri-business entrepreneurs with bankable proposals and a viable partner in the seed supply chain for climate-resilient crop varieties.
26. **Component C – Institutional Development, Knowledge and Policies for a Climate-resilient Agriculture** (US\$ 23.45 million): The objective of this component is to enhance the **transformative capacity of institutions and stakeholders** to promote and pursue a more climate-resilient agriculture, with sector strategies and policies based on strong analytical underpinnings and cutting-edge climate, water and crop modelling. This component will ensure sustainability in the approach proposed for building climate resilience through a transformative management of agriculture, soil and water resources, by: (i) strengthening the capacity of existing institutions to design and deliver agro-technical and climate advisory services, (ii) establishing a Climate Innovation Center, and (iii) promoting an evidence-based policy dialogue on climate resilience. Successful implementation of the activities in this component will contribute to achieving the PDO by increasing the outreach of institutions and agencies promoting climate-resilient agriculture in the project area (KPI #5) and generating spillover effects to farming communities from other villages not covered by project activities.



27. The component supports the mainstreaming of climate-resilience in the district-level Strategic Research and Extension Plans (SREP). Similarly, under this component the project supports the update of district-level climate contingency plans for agriculture production, building on the knowledge generated with the development of the Mini Watershed Plans under Component A.
28. A Climate Innovation Center (the first of its kind in India) will be established as part of the Bank supported global network of CICs to provide a range of short and longer term business services (including incubation, coaching, business development) to growth-oriented FPCs and SMEs seeking opportunities to scale up their economic activities and climate solutions (including in the agriculture, water and energy sectors).
29. **Component D – Project Management** (US\$ 37.78 million): This component covers the activities of the Project Management Unit (PMU) set up by the GoM during the project preparation phase. The PMU, led by the Project Director appointed by the GoM, ensures that all PoCRA activities are carried out in line with the provisions of the project Financing Agreement, the Bank-approved project documents (including the Project Implementation Plan, PIP), the procurement regulations stipulated in the World Bank Procurement for IPF Borrowers (2016), and the guidelines applicable to the project. The PMU is responsible for the day-to-day operations of the project, for the project liaison with the Bank and the GoM, as well as for the institutional coordination among the various agencies implementing project activities at local level. Under this component, a range of fiduciary activities will be carried out, including overall financial management, accounting, reporting and auditing, implementation of the Project Procurement Strategy for Development (PPSD) and Bank-approved procurement plan; and monitoring of environmental and social safeguards compliance.
30. This component will further cover the overall project Monitoring and Impact Evaluation (M&IE) and reporting activities, including the project impact evaluation; the implementation of the project's ICT activities; and the coordination with a human resources agency to be hired for filling the project's technical positions in the field. Finally, under this component, the PMU will implement all activities related to communication, public awareness and outreach, including setting up and maintaining a comprehensive project website that also accommodates an open space for lodging stakeholders' complaints as part of the project's Grievance Redress Mechanism (GRM). All project incremental operating costs are covered under this component.

## E. Implementation

### Institutional and Implementation Arrangements

31. **The project is fully integrated in the GoM administration and implementation is designed to capitalize on existing GoM agencies at state, districts, sub-districts and village level.** Overall project implementation is the responsibility of the Department of Agriculture, DoA (GoM). Where institutional capacity is limited and special skills are required, the project will acquire outside expertise, including consulting services. The project will give particular attention to institutional coordination across departments, agencies and strategic partners involved in the implementation of project activities. The associated GoM agencies include: Soil and Water Conservation Department, Department of Water Supply and Sanitation, Forest Department, Department of Marketing and Cooperation, and the Department of Animal Husbandry, Dairy and Fish.
32. **Overall project oversight is the responsibility of the Project Steering Committee (PSC),**



**chaired by the Chief Secretary, Department of Agriculture (GoM).** The main responsibility of the PSC is to provide strategic guidance for the implementation of the project and to act as the interface between the project and the GoM. The PSC also approves the annual work program and budget for the project, endorses the proposed renewal of MoUs with strategic partners, and is briefed by the Bank (and the Project Director) on the outcomes of implementation support and review missions carried out with the Bank team at least biannually.

33. **The day-to-day management and operation of the project is the responsibility of the Project Management Unit (PMU), headed by a Project Director appointed by GoM.** Given the transformative nature of the project, institutional coordination across the relevant sectors is emerging as a critical task for the PMU in developing an effective project implementation mechanism to achieve convergence with other GoI/GoM programs. The PMU is responsible for ensuring that: (i) all project activities are planned, financed and implemented as per the project annual work program and budget, (ii) project implementation is in line with operational guidelines of the Project Implementation Plan, (iii) project procurement and financial management activities are carried out in timely manner as per the World Bank's Procurement for IPF Borrowers (2016), the project fiduciary manuals and the procurement plan, and (iv) social and environmental safeguards applicable to the project are fully complied with. The PMU is also responsible for monitoring project activities, preparing the quarterly and annual project progress reports, and ensuring that all reports (including financial reports) are submitted to the Bank in timely manner.
34. **Implementation arrangements are designed to take full advantage of the decentralized nature of the public administration system.** At the regional level, a Divisional PMU is set up in Amravati, Latur and Aurangabad, and is headed by a Divisional Joint Director who acts as nodal officer for the project. At the district level, project implementation is supported by technical and fiduciary specialists supervised by the District Superintendent Agriculture Officer (DSAO) and the Director for ATMA. In each district covered by the project, a District Steering Committee is established, headed by a Collector (who also chairs the District Disaster Management Committee); all implementing agencies and line departments involved with the project are represented on the District Steering Committee. Project activities at cluster level are coordinated by a Cluster Assistant supported by the local contact farmers ("farmer's friends") and technical specialists from other departments.
35. Finally, at the village level, the existing Village Climate Resilient Agriculture Management Committee (VCRAMC) plays a key role in planning, monitoring and coordinating project implementation (e.g. watershed plans) and anchoring climate interventions at community level; to that effect, the VCRAMC liaises closely with the community institutions associated with the implementation of project activities, e.g. the Water User Associations, Watershed Development Committees, as well as Producer Organizations (incl. Farmer/Common Interest Groups).
36. **To meet the project needs for highly specialized technical skills, the PMU has reached out to Strategic Partners.** These public institutions have been providing technical assistance to the PMU and other project stakeholders during project preparation. These partnerships will be extended to the implementation phase and formalized with an MoU approved by the Bank; MoUs can be renewed on an annual basis subject to the endorsement of the PSC, satisfactory performance by the strategic partner and submission of an annual budget and work program with agreed deliverables.
37. The strategic partners already supporting the PMU include: (i) Gokhale Institute of Politics and



Economics (GIPE) for FPC assessment, M&E quality review and cost analysis of selected water interventions; (ii) Groundwater Survey and Development Agency (GSDA) in the area of improved groundwater resources management, including groundwater balance estimations and modelling managed aquifer recharge; (iii) Indian Council of Agricultural Research (ICAR) for climate-resilient technology transfer with the collaboration of KVKs and SAUs; (iv) Indian Institute of Technology Bombay (IITB) for the development of the framework for the water balance assessment in the PoCRA mini watersheds; and (v) Yashwantrao Chavan Academy of Development Administration (YASHADA) and International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) for the preparation of participatory in micro plans in selected PoCRA clusters. The PMU may invite other strategic partners to support PoCRA as new needs may emerge during project implementation.

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#### **F. Project location and Salient physical characteristics relevant to the safeguard analysis (if known)**

Maharashtra is one of India's most prosperous states, with a population of 114 million. Yet, it has some of India's poorest people, four of its 36 districts are among India's 106 most backward. Agriculture and industry form the mainstay of the state's economy. Most of the cultivable land is still rain-fed, relying heavily on the southwest monsoon rains. The net irrigated area is only 30.77 million Ha or about 16% of cultivable land. The proposed project will be implemented in the 15 districts of the Marathwada (Aurangabad division) and Vidarbha (comprising Nagpur Division and Amravati Division) regions that have been most affected by the recurrent monsoon failures of recent years. Most of the project area is in Maharashtra's semi-arid agro climatic zones. Major rivers that drain the Vidharba region are the Wardha, and Kanhan rivers which are all tributaries of Godavari river and Khapra, Sipna, Gadga and Dolar along with Purna, are the tributaries of Tapti river. There are no major rivers in Marathwada region. Out of a total of over 18,000 villages in the districts selected, the project will cover up to 5,000 villages (project area of around 3.5 million ha) characterized by a high climate-vulnerability index and low HDI; this includes about 1,000 villages located in the Purna river basin tract with very high levels of soil salinity and sodicity. The project will not be implemented on any forest land, or within sensitive natural habitats and their buffer zones. The proposed project is premised on the fact that climate changes are quite inevitable and that it affects all the households much more on the livelihoods of the poor and vulnerable sections. Further, it is well recognized that the households/ communities in the rain fed agriculture are quite diverse and heterogeneous with several sub groups identifiable based on several factors – resource endowment, gender, ethnicity ( scheduled tribes), castes (scheduled castes), religious minorities and geographical setting ( forests, hills, coastal areas). Each of these subgroups gets affected differently and has differential capacity for participation. Lastly, to ensure a village/ community spread resilience, group / collective action would be essential which demands substantial outreach efforts. Given this scenario, following issues emerge as significant: local participation, institutional linkages and communication outreach.





**G. Environmental and Social Safeguards Specialists on the Team**

Suryanarayana Satish, Social Safeguards Specialist  
Anupam Joshi, Environmental Safeguards Specialist  
Sharlene Jehanbux Chichgar, Social Safeguards Specialist

**SAFEGUARD POLICIES THAT MIGHT APPLY**

Safeguard Policies	Triggered?	Explanation (Optional)
Environmental Assessment OP/BP 4.01	Yes	<p>OP 4.01 is triggered because the project involves a series of interventions for increasing productivity, enhancing resilience, and agriculture value chain development. Investments to be supported under the project will not lead to any major irreversible impacts. the project by design promotes better natural resource and environmental management within the selected areas. The potential environmental issues that could arise if project financed investments are not implemented appropriately, include soil degradation, over-extraction of groundwater, build-up of pest resistance, and pollution of the eco-system with agro-chemicals, and, pesticide-related safety issues. Activities for post-harvest management and value chain creation for product aggregation, handling, and marketing could have impacts associated with general civil works construction. This includes appropriate site selection for creating new infrastructure and reducing impacts of construction related activities like debris disposal, dust and solid wastes.</p> <p>The project will also have positive impacts on the environment and natural resource base of the project area such as drought-proofing rain-fed agriculture in the semi-arid regions, prevention of soil degradation, increase of soil moisture and in biomass and organic matter of soil, decrease of run-off and soil losses, increased climate resilience and</p>





annual water availability. All mitigation measures would be carefully designed in order to enhance the positive impacts, and ensure sustainability of investments.

Overall, the project related impacts are mostly positive, and due to the nature and level of impacts it is classified as category B as per OP 4.01. An Environmental Assessment of the proposed project has been undertaken by GoM as per the requirements of OP 4.01, and an Environmental Management Framework has been prepared to guide investment planning and implementation. to ensure compliance with the applicable regulations and triggered safeguards policies. The EMF sets out the procedures that will be applied to the schemes to be taken up by farmer groups and FBOs which includes, (i) Screening checklists to identify impacts associated with project activities, and thereby recommending suitable mitigation measures, and that selected activities don't contravene the relevant national and state regulations and the triggered Bank safeguard policies.(ii) Environmental Guidelines (EGs) / best practices for each typology of investment and (ii) EMP formats that help to apply the EGs and prepare a mitigation plan for the civil works investments in value chain enhancement. The project has also prepared an integrated pest management strategy.

Natural Habitats OP/BP 4.04	No	Project financed investments will not intervene in any critical natural habitats, or protected areas (such as wild life sanctuaries, national parks etc.). Further, the project will not take up any agricultural activities within the buffer zone of these habitats, so there is no possibility of these areas being adversely impacted. Hence the policy is not triggered.
Forests OP/BP 4.36	No	Project financed activities will not be located within any forest areas, or change the management of forest areas. Hence the policy is not triggered.
Pest Management OP 4.09	Yes	MH PoCRA interventions supported through individual farmers/ producer organizations will involve the use of pesticides. Though the project will not involve the procurement of pesticides, it is likely that with better value chain infrastructure and



		<p>marketing opportunities in close proximity, farmers would tend to increase productivity through application of fertilizers, pesticides and other agro-chemicals for increasing crop yields and while diversifying cropping pattern and intensity. Therefore, Pest Management (OP 4.09) is triggered. The EMF includes and integrated pest management plan for main crops [ Sorghum, Pigeon pea, Soya bean, Cotton, Gram, Safflower, and Sweet Lime] to mitigate adverse impacts arising from use of pesticides, mainstreaming biological control and use of bio pesticides, and guidance on trainings and demonstrations, safe- handling, application and storage of pesticides so that there is no significant adverse impact on the environment and public health. The project would mainstream and promote through trainings, demonstrations and sensitization for the wider use of the Integrated Pest Management Plan to all farmer groups and FBOs under PoCRA.</p>
Physical Cultural Resources OP/BP 4.11	No	<p>The project is not expected to have an impact on physical, cultural and/or religious sites and will be implemented in areas where agriculture is already practiced.</p>
Indigenous Peoples OP/BP 4.10	Yes	<p>There are 2.7 million Scheduled Tribe population in the 15 project districts which account to about 8% of the total population. Further, 27 Tehsils spread across 11 districts are covered under the Fifth Schedule of the Indian Constitution which provides a variety of safeguards for the tribals. Given this, the project triggers the Bank’s Operational Policy (OP) 4.10 on Indigenous Peoples. In accordance, a Tribal Peoples Plan (TPP) or Tribal Peoples Planning Framework (TPPF)— has been prepared</p>
Involuntary Resettlement OP/BP 4.12	No	<p>As the project interventions are firmed up and social assessment completed, it has become clear that project's interventions need not resort to involuntary land acquisition. It has been agreed that no private lands will be acquired for the project. Hence OP 4.12 is not triggered.</p>
Safety of Dams OP/BP 4.37	No	<p>OP 4.37 is not triggered as the project investments will not support construction, or rely on performance of an existing dam &gt;15m height. The project will not support rehabilitation of existing or</p>



building any new irrigation schemes originating from existing dams in the State

The project may include construction of small check dams. The potential adverse safety and security impacts will be addressed in the ESMF which will include adequate measures to ensure that the design, construction and the maintenance of the small dams will be done by qualified engineers.

Projects on International Waterways OP/BP 7.50	No	OP 7.5 is not triggered as no international waterways are involved.
Projects in Disputed Areas OP/BP 7.60	No	NA

**KEY SAFEGUARD POLICY ISSUES AND THEIR MANAGEMENT**

**A. Summary of Key Safeguard Issues**

1. Describe any safeguard issues and impacts associated with the proposed project. Identify and describe any potential large scale, significant and/or irreversible impacts:

Project interventions are unlikely to result in significant adverse environmental and social impacts as the project is targeted at improving livelihoods of, especially, poor and vulnerable farming communities living in complex diverse and risk prone areas. Nor are any large scale irreversible impacts expected. The project endeavors at effecting climate resilient agriculture practices, sustainable water source augmentation and efficient use, promoting climate-resilient seed varieties (short duration cycle, drought-, salinity- or heat-tolerant). Integrated watershed planning is the centre-point activity for project as it improves the natural resource base around which other development initiatives are founded. Therefore, technically, the project by design promotes better natural resource and environmental quality management within the selected areas. Reduction of agriculture waste produce during the post-harvest stage, by improving storage possibilities along with localized value addition is also a key strategy. However, in order to ensure that positive impacts do occur, efforts have been made to identify safeguards risks and measures to address them.

From a social perspective, as certain project areas are inhabited by tribal people. So, reaching out to them, so as to ensure inclusion and equity, assumes significance.

The potential environmental issues that could arise if project financed investments are not implemented appropriately, include soil degradation, over-abstraction of groundwater, . Build-up of pest resistance, and pollution of the eco-system with agro-chemicals, and, pesticide-related safety issues and therefore the use of the EMF, will be very important at all implementation levels. Activities for post-harvest management and value chain creation for product aggregation, handling, and marketing could have impacts associated with general civil works construction such as loss of vegetation, air and water pollution, noise, occupational health and safety issues; operational phase impacts such as solid and waste discharges, disposal issues, noise. The EMF also recommends guidelines for careful site selection for creating new infrastructure and reducing impacts of construction related activities like debris disposal, dust and solid wastes.



2. Describe any potential indirect and/or long term impacts due to anticipated future activities in the project area:

The project does not involve any potential significant, indirect and/or long term impacts due to anticipated future activities in the project area. The project's long-term environmental and social impacts are expected to be highly positive overall, with improved productivity and water use efficiency, and climate resilience all leading towards improved livelihoods.

3. Describe any project alternatives (if relevant) considered to help avoid or minimize adverse impacts.

The EMF has been designed to integrate and mainstream environment management into the watershed plans right from the planning stage and would be linked to the various stages of the plan preparation and implementation. Environmental good practice guidelines have been developed site selection, design and implementation of project activities so that it serves to mainstream environmental management in project activities. Use of solar power pumps was considered and will be promoted, and bio-pesticides and bio-fertilizers (vermi- compost production) will be recommended and promoted instead of chemical alternatives.

4. Describe measures taken by the borrower to address safeguard policy issues. Provide an assessment of borrower capacity to plan and implement the measures described.

Social Safeguards. The Social assessment undertaken by the project preparation had identified the following as key issues: (i) participation, (ii) inclusion, (iii) decentralization, (iv) gender, (v) human and institutional development and (vi) Information, Education and Communication (IEC) campaign. A Social Management Framework (SMF) has been prepared which comprises not only measures to address the issues but also the implementation mechanism thereof. The framework, among others, comprises: Human and Institutional Development Strategy, Tribal Peoples Planning Framework (TPPF) and Gender Action Plan (GAP).

Towards ensuring inclusion and equity for the tribal communities, a Tribal Peoples Planning Framework (TPPF) has been prepared in accordance with the Operational Policy on Indigenous Peoples (OP 4.10). As and when the tribal interface surfaces, the framework will be adopted and a Tribal Peoples Plan (TPP) will be prepared. This plan preparation will be similar that of the village/ cluster plans envisaged under the project, but, with a focus on the needs of the tribal areas. Key elements of which are as follows. Due representation for tribals are provided in the VCRMC and its chairperson will invariably a tribal person. In accordance with the PESA Act, all decisions will be taken by the tribal Gram Sabha. Separate tribal specific IEC program will be designed and implemented to ensure imparting of fuller awareness and enable a greater demand pull on the project interventions. This will help in accessing benefits from the project as well as from other government programs. Experiences and expertise emanating from tribal development initiatives made elsewhere within and outside the state will be drawn and fed into developing individual and institutional capacity of tribals. Farming Systems approach will underpin the intervention strategy in the tribal areas ensuring integrating all facets of livelihood- crops, trees and livestock. This may entail dovetailing with other projects or schemes, all of which will be reflected in the Micro Plans. Most importantly, in scheduled areas, special emphasis will be on rejuvenation of degraded lands through appropriate plantations to make green not only culturable waste but also lands assigned under FRA Act. To enable all these, specialized and experienced external agencies will be deployed to provide implementation support to the tribal communities.

An Environmental Management Framework (EMF) has prepared to ensure compliance with the applicable safeguards policies. The EMF sets out the procedures that will be applied to the schemes to be taken up by farmer groups and as part of the mini watershed plans/clusters, and FPCs for value chain enhancements, making use of investments provided to them under Components 1 and 2 of the project so that project financed activities so not result in any



adverse impacts. The EMF comprises a set of procedures for (i) screening through a list of non-permissible activities and regulatory requirements list to provide approval to activities that don't contravene the relevant national and state regulations and the triggered Bank safeguard policies (ii) provisions for identification of impacts on the basis of scale and probability of occurrence associated with the activities selected in the mini watershed plans (iii) intervention/activity wise key environmental issues and mitigation measures, best practices, and environment friendly technologies; (iv) EMP checklists for all civil works to ensure that specific entities implementing the civil works are provided with the mitigation and monitoring guidance for specific stages of the project activity cycle. The EMF also contains institutional arrangements, training and capacity building plan, monitoring and external environmental audit mechanisms, and budget to enable effective implementation of the safeguard measures. The Project will monitor the EMF provisions as an integral part of each of the project components through MIS system and periodic monitoring and evaluation process.

The institutional arrangements for implementation of the SMF, TPPF, EMF and IPM have been agreed with GoM to ensure effective management of the potential environmental issues and implementation of appropriate mitigation measures. It is agreed that GoM will recruit Environmental and Social Development Specialists (SD specialist is already in position) at the State PMU to provide overseeing and management of safeguards provisions, monitoring, training and capacity building, reporting and documentation. The specialists in will keep track of the progress, review and produce monitoring reports on a quarterly basis. At the divisional level, safeguards management capacity will be built into the technical multi-disciplinary team which will support the PMU with monitoring at the field level to ensure integration of safeguard requirements into each activity and implementation of SMF, TPPF, EMF and for facilitating and reviewing EMP checklists for civil works.

The borrower (Government of Maharashtra) is familiar with the Banks social/environmental policy requirements, as the State has been engaged with a number of Bank funded projects. However, capacity building measures (training, study tours, workshops etc) have been designed towards enhancing the capacity of individuals and institutions associated with the project.

5. Identify the key stakeholders and describe the mechanisms for consultation and disclosure on safeguard policies, with an emphasis on potentially affected people.

GOM had enlisted the support of an external specialist consulting firm to conduct social and environmental assessments and preparation of SMF and EMF. This initiative had been supported by the nation's renowned Corporate Body - Tata Trust. As a part of which,, a number of stakeholder consultations have been held at various levels -- village, district, and state. This has enabled evincing in ascertaining the expectations and concerns of various stakeholder groups -- farmers, technical institutes, agricultural university, local NGOs, government officials, farmers' producer companies . Overall, the response to the project components and activities has been positive. The advanced draft of the EMF was discussed and presented at the division head offices in Amravati, Aurangabad and Nagpur, ( with representation from 5-6 clusters per division) and a stakeholder workshops were conducted in September 2017. The comments have been recorded and incorporated into the SMF/ EMF report. The draft reports has been disclosed GOM's Department of Agriculture website and subsequently on the Bank's Infoshop. The executive summary of the reports have been translated into Marathi for wider dissemination.



**B. Disclosure Requirements**

**Environmental Assessment/Audit/Management Plan/Other**

Date of receipt by the Bank	Date of submission for disclosure	For category A projects, date of distributing the Executive Summary of the EA to the Executive Directors
01-Aug-2017	14-Sep-2017	

**"In country" Disclosure**

India

14-Sep-2017

Comments

Draft SMF and TPPF have been disclosed on Government of Maharashtra, Department of Agriculture Website <http://www.krishi.maharashtra.gov.in/1260/PoCRA>.

**Indigenous Peoples Development Plan/Framework**

Date of receipt by the Bank	Date of submission for disclosure
14-Sep-2017	14-Sep-2017

**"In country" Disclosure**

India

14-Sep-2017

Comments

Draft SMF and TPPF have been disclosed on Government of Maharashtra, Department of Agriculture Website <http://www.krishi.maharashtra.gov.in/1260/PoCRA>.

**Pest Management Plan**

Was the document disclosed prior to appraisal?	Date of receipt by the Bank	Date of submission for disclosure
Yes	01-Aug-2017	14-Sep-2017

**"In country" Disclosure**

India

14-Sep-2017

Comments

EMF including IPM has been disclosed on Government of Maharashtra, Department of Agriculture Website <http://www.krishi.maharashtra.gov.in/1260/PoCRA>.





If the project triggers the Pest Management and/or Physical Cultural Resources policies, the respective issues are to be addressed and disclosed as part of the Environmental Assessment/Audit/or EMP.

If in-country disclosure of any of the above documents is not expected, please explain why:

Social and Environmental safeguard documents have been disclosed in country.

**C. Compliance Monitoring Indicators at the Corporate Level (to be filled in when the ISDS is finalized by the project decision meeting)**

**OP/BP/GP 4.01 - Environment Assessment**

Does the project require a stand-alone EA (including EMP) report?

Yes

If yes, then did the Regional Environment Unit or Practice Manager (PM) review and approve the EA report?

Yes

Are the cost and the accountabilities for the EMP incorporated in the credit/loan?

Yes

**OP 4.09 - Pest Management**

Does the EA adequately address the pest management issues?

Yes

Is a separate PMP required?

Yes

If yes, has the PMP been reviewed and approved by a safeguards specialist or PM? Are PMP requirements included in project design? If yes, does the project team include a Pest Management Specialist?

Yes

**OP/BP 4.10 - Indigenous Peoples**

Has a separate Indigenous Peoples Plan/Planning Framework (as appropriate) been prepared in consultation with affected Indigenous Peoples?

Yes

If yes, then did the Regional unit responsible for safeguards or Practice Manager review the plan?

Yes

If the whole project is designed to benefit IP, has the design been reviewed and approved by the Regional Social Development Unit or Practice Manager?

**The World Bank Policy on Disclosure of Information**



Have relevant safeguard policies documents been sent to the World Bank for disclosure?

Yes

Have relevant documents been disclosed in-country in a public place in a form and language that are understandable and accessible to project-affected groups and local NGOs?

Yes

### All Safeguard Policies

Have satisfactory calendar, budget and clear institutional responsibilities been prepared for the implementation of measures related to safeguard policies?

Yes

Have costs related to safeguard policy measures been included in the project cost?

Yes

Does the Monitoring and Evaluation system of the project include the monitoring of safeguard impacts and measures related to safeguard policies?

Yes

Have satisfactory implementation arrangements been agreed with the borrower and the same been adequately reflected in the project legal documents?

Yes

## CONTACT POINT

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**APPROVAL**

Task Team Leader(s):	Patrick Verissimo Ranjan Samantaray
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**Approved By**

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Country Director:	Hisham A. Abdo Kahin	19-Dec-2017

**Note to Task Teams:** End of system generated content, document is editable from here. *Please delete this note when finalizing the document.*