I. Project Context

Country Context

Project Context for Key Development Issues and Rational for Bank Involvement: Rajasthan shares many of the challenges facing India’s low income states in achieving medium term growth and poverty reduction. It is an overwhelmingly rural and agricultural state, with very limited water resources availability. Per capita growth rates have halved in the past five years compared to the previous two decades and the state is exposed to increasing economic volatility. Increasing population, growing urbanization, and rapid industrialization combined with the need for raising agriculture productivity generates competing claims for water not only in Rajasthan but also across India. With limited water resources and increasing constraints on water availability for various uses, in particular for agriculture, improving productivity per unit of water use in irrigated agriculture (both surface and groundwater) and achieving productivity gains in rain-fed agriculture (watersheds) are one of the great untapped opportunities of the agriculture sector in the state. A more water-efficient agriculture holds the promise of smallholder farmers profitably shifting from low value, often water-guzzling crops to high value farming aiming for high returns on unit of water used, and driven by market demand. In few other states of India is this challenge as starkly posed as in Rajasthan.

Rajasthan, located in western India, is the largest state in the country (about 350,000 km²) and considered to be one of the lagging states within the union. The population of Rajasthan is over 56 million and with more than three quarters of the population living in rural areas the state is overwhelmingly rural. It has one of the highest proportions of scheduled caste (17 percent) and scheduled tribe (13 percent) population among Indian states. Rajasthan’s climate is marked by frequent droughts and a short monsoon season (July to September) resulting in annual rainfall ranging from 150 to 900 mm in different part of the state (average annual mean: 576 mm), and temperatures ranging from 5°C to 45°C and more. Agriculture continues to be largely dependent on rainfall (and water transfers from other states)

Rajasthan is faced with acute water quantity and quality issues. Covering 10 percent of India’s land area and about 5 percent of country’s population, Rajasthan has less than 2 percent of its water resources. Erratic rainfall and recurring droughts have exacerbated the situation. A large part of the state relies on groundwater for agriculture, industrial and domestic consumption. Overexploitation has worsened already acute groundwater quality and sustainable quantity issues. Recent efforts at obtaining water sources to meet its even drinking water needs have involved transporting water from neighboring states by train and truck. Thus sustainable and efficient use of its scarce water resources from all available water sources for various uses in the context of ever increasing and competing demands from all sectors of economy are the major challenge for the state.

II. Sectoral and Institutional Context
Rajasthan’s economy has undergone considerable transformation in the recent past in terms of growing manufacturing and service sectors, with agriculture (including livestock) today providing for around 25 percent of the state’s GDP (national average: 16 percent). The state’s economic transformation notwithstanding, some 5.4 million households, however, continue to be engaged in farming (of which roughly half are small or marginal farmers) and over 60 percent of the state’s population depend on (often, low productivity) agriculture for their livelihood. Increasing agricultural productivity (water, land, labor) is critical for the future of the sector in Rajasthan. Agriculture alone accounts for some 80 percent of total water consumption in the state. Given the size of the agriculture sector and of its water footprint, improved water and agriculture productivity are key elements for a further structural transformation of the overall economy of the state.

Rajasthan is India’s largest producer of mustard (oilseed crop), pearl millet (known as bajra), three spices: coriander, cumin, and fenugreek; cluster beans and isabgol; and it is the second largest producer of maize. Rajasthan has the second largest herd of livestock amongst Indian states, contributing about 10 percent of the country’s milk and 30 percent of mutton production. The state also produces wheat and coarse cereals, rapeseed, gram, and soybean. Agriculture and livestock production take place across ten distinct agro-ecological zones, and often in extreme agro-climatic conditions. In much of the state only one rain-fed crop can be grown during the kharif (or monsoon) season which, too, is associated with high climate-related risk. Ongoing climate variability and climate changes result in decreasing surface and ground water availability, flash floods, degradation of soil resources, decrease in crop yields, greater vulnerability to crop pest outbreaks, and declines in forest and pastureland ecosystem, goods and services, thus rendering agricultural and herding communities extremely vulnerable to weather related losses of life, livelihood, and food security. Given this scenario, farmers will need to adapt further and make agriculture practices still more resilient in light of ever harsher and changing agro-ecological conditions.

In addition to harsh and volatile agro-climatic conditions, agriculture production is compounded by farmers having limited access to inputs (land, seeds, fertilizers and water), technology, markets and farm credit. This has resulted in a predominance of low productivity, risk-minimizing and subsistence-oriented farming systems (often integrating crop and livestock production) capable of resilience (within limits) against droughts as well as ability to produce a marketable surplus in years of good monsoon rainfalls. Much of agriculture production takes place on some 17.4 million ha of near-subsistence level production with farms amounting to around 4.0 ha on average. In areas where irrigation can be secured (either from surface water delivered by cannels or from groundwater provided by wells or tubewells) on about only one fifth of the cropped area or some 3.5 million hectares, agriculture productivity and surplus production is significantly higher and production risk considerably reduced. Allocating around 80 percent of the state’s water to often low value, highly water-demanding crops such as wheat, however, has resulted in a resource use that is economically inefficient and environmentally unsustainable.

While challenges in making the (semi-arid) desert bloom are many, there are also significant opportunities associated with agriculture in Rajasthan. These include: (1) a promising potential for diversification into higher value, less water consuming horticulture, floriculture, spice and medicinal plant production across a variety of agro-ecological zones; (2) scope for livestock development focusing on improved animal health, nutrition, and access to markets; (3) the availability a range of tested on-farm water management technologies and agronomic practices that can be rolled-out to the farming community at large; (4) a policy framework that, while not necessarily perfect, is increasingly conducive towards private sector-led, sustainable agriculture, including recently revised state policies on agriculture, livestock and agribusiness development as well as on water resources management; and (5) experience in establishing and managing public private sector partnerships in agriculture (for instance, in the seed sector) that can be expanded towards a broader application.

Lessons Learned. Numerous lessons come to bear on the proposed operation from a long experience of agriculture development in India. From Assam and UP comes the insight that a holistic approach is needed to increase farmer incomes by supporting agriculture productivity, and by improving market access and investment in market infrastructure. From investments in irrigation projects stems the understanding that effective participation of water users as community organizations is critical for improved on-farm water management. The experience of watershed development indicates that common resources (such as water and land) can be managed efficiently by community-based organizations that are also able to link to markets through value-chains.

Achieving sustainable water resources management practices within agriculture is at the core of the RACP. This takes place within a challenging political economy which the Government recognizes and is cognizant of. It is marked by relatively weak water institutions (both public as well as community-level institutions) and an incomplete water regulatory framework (in particular with respect to groundwater management); economic incentives geared towards consuming rather saving agriculture water including power subsidies, low water tariffs and high agricultural minimum support prices for water intensive crops, such as wheat; as well as potential for water conflicts, both between sectors as well as amongst water uses within agriculture (for instance, upstream vs. tail-end irrigation farmers or inequitable groundwater extraction and rainwater harvesting.) Achieving sustainable water resources management practices (and also potential savings of agriculture water for allocation outside of the sector) implies fostering significant voluntary behavioral change on the part of the farming community. This in turn is predicated on changing incentives that emphasize maximizing income per unit of water as opposed to maximizing on-field water applications.

Within the context of Rajasthan, this in turn requires introducing and implementing an end-to-end approach ranging from water management to agriculture practices and agriculture marketing. The aim for the Government of Rajasthan is thus achieving a new compact or consensus by which the state helps farmers to get more rupees per unit of water in compensation for voluntarily using fewer units of water. The various individual building blocks of an end-to-end approach have been well tested and proven on a stand-alone basis in India, including various types of water users associations, agriculture technology transfer, farmer producer groups, marketing development, etc. However, integrating these elements into one single coherent agricultural development approach has not been attempted in India to date. Furthermore, striving to introduce this approach across three water sources, – i.e canal water, ground water and rainfed (watershed) agriculture – requires a water source-specific modulation of a holistic approach towards achieving a new compact in agriculture water management in the state.

III. Project Development Objectives

The proposed Project Development Objective (PDO) is to establish at scale the feasibility of a distinct agricultural development approach that helps farmers to get more rupees per unit of water in compensation for using fewer units of water by integrating water management and agricultural technology, farmer organizations, and market innovations in selected locations across the ten agro-ecological zones of Rajasthan capable of sustainably increasing agricultural productivity and farmer incomes.
IV. Project Description

Component Name
- Climate Resilient Agriculture:
- Markets and Value Chains
- Farmers Organizations and Capacity Building
- Project Management and M&E

V. Financing (in USD Million)

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VI. Implementation

The RACP will be implemented in selected locations in each of the ten agro-ecological zones (AEZ) in Rajasthan.

The RACP envisages the involvement of seven line departments, i.e. Agriculture, Horticulture, Animal Husbandry, Agriculture Marketing, Water Resources (Canal), Ground Water, and Watershed department (within Rural Development). To ensure coordination as well as manage implementation, a Project Management Unit (PMU) has been established independently from these line departments with legal status of a society under the Rajasthan Society Act. The PMU, headed by a Project Director, is responsible for overall implementation and day to day coordination of RACP activities, including responsibility for overall financial management, central level procurement, safeguards, M&E, supervision of CACPs and other backstopping arrangements.

VII. Safeguard Policies (including public consultation)

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