PROJECT INFORMATION DOCUMENT (PID)
CONCEPT STAGE

Report No.AB4993

Project Name	Sustainable Management of Agricultural Research and Technology Dissemination Project
Region	EAST ASIA AND PACIFIC
Sector	Agricultural Research and Extension (100%)
Project ID	P117243
Borrower(s)	THE GOVERNMENT OF INDONESIA
Implementing Agency	Indonesian Agency for Agricultural Research and Development (IAARD)
Environment Category	[] A [] B [X] C [ ] FI [ ] TBD (to be determined)
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1. Key Development Issues and Rationale for Bank Involvement

Agriculture plays an important role in Indonesia's economy, providing employment to over 40 percent of the workforce and income to two-thirds of the country's poor. Increases in agricultural productivity are credited with reducing poverty in Indonesia during the 1970s and 1980s, and even now continue to be the key livelihood for many and a key source of poverty alleviation. Spending on the agricultural sector accounted for less than 5 percent of the total national budget in 2008. As a percentage of value added, Indonesia spends considerably less than other regional and middle-income countries. In 2004, public spending as a percent of value added in Thailand or Malaysia was four times greater than in Indonesia.

While public spending on agriculture has increased recently in real terms this has failed to increase agricultural productivity. In 2001-08, national spending on agriculture[1] increased from Rp 11 trillion to Rp 53 trillion, an average of 11 percent per year in real terms. The agriculture share of total government spending doubled from 3 percent in 2001 to 6 percent by 2008, reaching 1 percent of GDP because of increasing spending on agriculture subsidies. This did not result in a corresponding rise in agricultural production, which increased an average of 3 percent per year in 2001-08, and per-worker value-added was stagnant. Productivity in major crops was low compared to other Asian countries. However, much of the current focus of agricultural policy remains centered on production of staple food crops. Self-sufficiency in staple foods remains a priority, driven in part by food security concerns and exacerbated by the food price crises of 2008. MoA allocates a large and increasing share of resources to input subsidies in an effort to increase the production of food crops. Agriculture subsidies account for 60% of all agriculture spending in Indonesia (2008). Fertilizer subsidies are about 50% of all subsidy spending ($1.6bn) at 0.3% of GDP.

[1] For the purpose of this analysis, national agriculture expenditure includes expenditure by MoA, sub-national government spending on agriculture and irrigation, irrigation expenditure under the Ministry of Public Works and central government subsidies closely related to agriculture (e.g. fertilizers), but excludes expenditure on fisheries and forestry and rural roads.

Over the past three decades, Indonesia significantly boosted its capacity in agricultural R&D, but remains low. Public spending on R&D was only 0.22 percent of the agriculture output in 2003. By 2007, spending on R&D was still only half that on the seed subsidy. After adding in private sector agricultural R&D investments, the intensity with which Indonesia invested in agricultural research,[2] at 0.27 percent was at the level of Laos (0.24 percent), and much lower than Malaysia (1.92 percent) or the Philippines (0.46 percent).

The public research and extension systems are facing severe challenges to remain viable under pressure from staff and budget decentralization, demands for greater client-orientation, and increasing need accommodate commercial pressures. Broad-based growth in agriculture needs effective systems for generating, adapting and disseminating technology relevant to farmers and rural producers. Without new efforts to increase productivity in agriculture, Indonesia's goal of using agricultural growth to generate broad-based rural development and further reduce poverty may be undermined. High-quality agricultural research and extension systems will be critical to getting productivity onto a higher growth path. There is an urgent need for greater investment in agricultural research and technology dissemination – but this should take a demand driven approach and seek greater involvement of the private sector rather than relying on the old supply driven model.

Rationale for Bank's Involvement

Agriculture remains a key development priority despite the challenges faced by the sector. The President of Indonesia has taken a strong leadership role in developing an agenda for the revitalization of the agriculture, fisheries, and forestry sector (*Revitalisasi Pertanian Perikanan dan Kehutanan/RPPK*) that was formally presented in June 2005. The RPPK focuses on the development of human resource capacity and participatory empowerment of farmers through improved information systems, training in community agribusiness development, increasing funding for long-term technological research and development to improve agricultural competitiveness. This is also reflected in the Government of Indonesia (GOI) Medium Term Plan, 2005-2009 (RPJM) which calls for revitalizing agriculture through the development of agribusiness linkages to improve farmers' incomes and for greater diversification.

The Bank has supported GOI in the development of innovation in its agricultural research services since 1975 and its extension services, agricultural education and training since the late 1960s. Most recently, the extension projects DAFEP and FEATI have developed participatory extension aimed at agricultural commercialization. SMARTD along with FEATI and other bilateral projects offers an opportunity to reshape the delivery of agricultural services (research and extension) towards a dynamic multi-provider system that is needed to increase the competitiveness of the Indonesian agricultural sector in international markets.

The Bank's comparative advantage lies in its global and regional expertise, its participatory and inclusive approaches to development and the quality of its economic and sector work. The Bank, in collaboration with IAARD, prepared a Strategic Framework for Research Management (2008) that will underpin the scope and design of the proposed project. Currently, the Bank is also engaged in the preparation of a public expenditure review of the agriculture (APER) sector (including a stand-alone policy note on expenditures in agricultural R&D) in collaboration with

[2] R&D expenditure as a share of total agriculture output.

Ministry of Finance, Bappenas and Ministry of Agriculture. Analytical inputs derived from the APER are being provided to GoI towards the preparation of the next RPJM and would support project implementation.

The Bank can bring in experiences from other agricultural services projects financed by the World Bank in other parts of the world such as Colombia, Brazil, China, and India, to yield lessons learned in addressing institutional reforms – in particular with respect to the sustainability of funding for research and technology transfer, allocation of funding on a competitive basis, empowerment of local communities and increased private sector participation. By helping strengthen the capacity of the Indonesian research establishment, the World Bank would prepare these public institutions to be reliable partners with the private sector through strategic public/private partnerships.

The proposed project is fully consistent with the World Bank's *Country Partnership Strategy (CPS)* with its theme of "investing in Indonesia's institutions". The project would meet key objectives of the CPS which emphasizes the "institutional lens" for supporting the national economy, and which focuses on strengthening the public administration system of the country. The CPS aims to provide support for improving service delivery systems, i.a., of agricultural services. It is also in-line with and supports Core Engagement 5 – Environment Sustainability and Disaster Mitigation, where Indonesia can benefit from investments "designed to scale-up funding to help [with] their effort to address climate change and to undertake appropriate mitigation and adaptation programs".

2. Proposed objective(s)

The proposed development objective (PDO) is to strengthen the capacity of IAARD to develop and disseminate international best practice technologies for improved agricultural productivity, profitability and sustainability.

Preliminary indicators include:

- Numbers of invited papers from Indonesian scientists, resource person placements in regional/international forum, and numbers of internationally peer reviewed publications;
- Percentage achievement of strategic plans for HRD, Infrastructure and Institutional development at mid term and project completion;
- Increase in farmer incomes from prioritized technologies in pilot rollout areas;
- Adoption rates of prioritized technologies in selected areas;
- Increase in public financing of research as a percentage of agricultural GDP.

3. Preliminary Description

The Government of Indonesia has requested a loan from the World Bank to support agricultural research management in the country with a focus on institutional and human resource development. The designated implementing agency is the Indonesian Agency for Agricultural Research and Development (IAARD) of the Ministry of Agriculture.

The project will address the following weaknesses in the Indonesian agricultural technology development and dissemination system: inadequate adoption of sound research management principles; poor selection and clear identification of research problems or gaps; limited external linkages of national agricultural research centers both in and outside the country; limited linkage between research and technology dissemination to increase the speed and rate of adoption; need to foster procedures in IAARD that enhance the relevance of research; and lack of scientific rigor and quality of research due to: ineffective scientific networking, lack of external reviews and linkages and non-competitive funding; and weak intellectual property rights for agricultural technologies.

It is expected that the proposed project will enhance the performance and effectiveness of the Indonesian Agency for Agricultural Research and Development (IAARD) in the development and dissemination of farmer and market demand-driven technologies. SMARTD will manage an innovative program to both upgrade public sector R&D institutions (human resource development, facilities and mobility improvement) and improve research quality and relevance through improving linkages to the private sector, universities, and NGOs as well as with its traditional extension and farmer partners. It will also develop models that improve the effectiveness and financial sustainability of the technology dissemination system with greater accountability to, and participation by, the farming communities.

Proposed Project Components

Component 1 Institutional Strengthening (US$40M)

Sub Component (i) Human Resources Development ($25 M)

This sub component will address the improvements required in the quality and quantity of research, outreach and supporting staff at all levels. The component will be based on a skills mapping and training needs identification. In particular, international training will be used to address the increasing insularity of Indonesian agricultural research, English skills development and management training will receive particular attention. Success will be measured in terms of English skills, international training and the development of partnerships in research domestically and internationally with both public and private institutions and organizations

Sub Component (ii): Infrastructure and Facilities Improvement ($15 M)

This sub component has two areas of focus. The first is on rationalizing and upgrading the laboratory network in support of both regional research needs and the commercialization of agriculture in areas such as soil fertility, food safety and export port inspections. The second focus is on converting researchers from a hardcopy to an online information focus so as to increase their international linkages. High speed terminal facilities would be installed at all main IAARD centers including the Agricultural Institutes for Adaptation of Technology (AIATs/BPTPs) at provincial level and research centers at regional level (termed Balits).

Civil works are expected to be minor, involving only rehabilitation rather than new construction. Any proposals for new construction would need strong justification and would only be

considered where there is existing available cleared land within an existing IAARD facility (e.g. the proposed upgrading of BPTPs in Aceh and West Papua).

Component 2 Technology Dissemination ($20 million)

Component 2 responds to the need to develop a system for applying mature technologies developed by the research system so as to increase uptake by farmers and improve acceptance by local government institutions. This objective would be achieved through a system of national and international research- extension- farmer linkages including partnerships, consortia, and dissemination methodologies. The component builds on experience of several projects implemented by World Bank, ADB and bilateral partners such as AusAID and ACIAR which were based on principles of collaboration between institutions, public private partnerships, financial and technical feasibility and social acceptability given the range of ethic backgrounds of target communities.

This component would support a more demand-driven, private-sector friendly approach through the use of competitive grants that cover a much wider spectrum of "public goods" in order to induce both technical and institutional innovations. IAARD has experience with competitive grants in previous Bank projects. SMARTD would provide grants that cover the risk of introducing a new technology and to overcome the "public good" bottleneck of high coordination costs needed to reach a critical mass of farmers. The Bank will draw on its experience in the ongoing China Agricultural Technology Project to inform the design of this sub-component.

Techniques such as mass media, internet cafes, large scale pilot rollouts (to replace localized demplots) and possibly the financing of farmer group grants to enhance adoption of market linked production would be some examples of techniques to enhance adoption. The component would require international and national technical assistance.

Component 3: Research Management and Strategic Planning ($10 M)

The component would develop improved systems of research management, including prioritization, budgeting, staff mentoring, international linkages and sustainable financing. It would address key past failings in the implementation of participatory planning at a functional level. Past failures can be attributed to factors such as lack of awareness building, staff mentoring, training and the development of linkages between the various levels of IAARD to form an agricultural information system in partnership with formal and non formal extension.

Improving the level of public goods financing for research is essential and experience has shown that it cannot be substituted by efforts to apply intellectual property rights on research outputs. Indonesia spends about 0.16% of its agricultural GDP on research compared to 0.4% for many regional partners and 1.9% in Malaysia. The component would include a review of current focus on food crops research vs research on horticulture/high-value commodities and a wider review of the issue of substituting public goods spending in agriculture for subsidies, following the findings of the ongoing agricultural/R&D public expenditure review.

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The component would train central level staff in policy formulation and lower level staff in the recognition of policy implications of their work so that they could turn their research results into policy briefs for central consideration. Further efforts will be included to develop the role of the provinces, not only through the BPTPs but also as a coordinating link in the information system between central and district/sub-district levels. The recent Extension Law (Law 16/2006) provides for a greater role of the provinces in agricultural extension and technology dissemination.

Component 4: Project Management and Monitoring ($10 M)

Project Management support will be provided to oversee implementation, coordinate implementing agencies, and ensure timely delivery of scheduled outcomes. The component would establish a PMU, provide for a baseline survey in all components and sub project surveys for technology rollouts. It would establish a system of reporting to provide regular monitoring data and would identify the project initiatives to be institutionalized for long term adoption. The component would operate through a central PMU and provincial PIUs established in the BPTPs or Balits

4. Safeguard policies that might apply

The project is expected to be a Category C project. No safeguard policies are expected to apply since the project is essentially an institutional development and capacity building project in nature. The technologies developed and disseminated in the project are expected to have positive environmental impacts. By working in provinces of Eastern Inodnesia (Gorontalo, W.Papua, Maluku) and in the West (Aceh) the project seeks to include the socio-economic development of some of the poorest and disadvantaged rural communities in Indonesia which will have beneficial social impacts.

5. Tentative Financing

Source:	($m.)
Borrower	20
Co-financing	Tbc
International Bank for Reconstruction and Development	60
Total	80

6. Contact point

Contact: Shobha Shetty
Title: Senior Economist
Tel: (62-21) 5299-3027
Fax: (62-21) 5299-3111
Email: sshetty1@worldbank.org