CITANDUY II ASSESSMENT

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The Citanduy II project began in September, 1980 with life-of-project funds of $ 18.9 million (L) and $ 4.25 million (G). The goal of the project was to sustain and enhance the productive capacity of the Citanduy Basin and to increase food production through the better use of soil and water resources. In pursuit of this goal, it was anticipated the project would:

- establish local and national capacities to design and implement a comprehensive watershed management program in selected areas of the Basin;
- increase sustained levels of food production in irrigated areas;
- improve local government capacity in the Basin to plan and manage integrated rural development.

The project has had serious implementation problems. With twenty months of its 6 year life to go, it has a loan pipeline of 86%. Although the Grant will be almost fully expended at the PACD (Attachment 1), unexpended Loan funds are anticipated to exceed $ 10 million (Attachment 2). Of twenty-five distinct activities under the project, several have just begun, one is unlikely to ever begin and virtually all have been plagued by confusion and disagreements about their purpose and implementation.

The project's very real difficulties have, however, diverted attention from some equally real achievements.* A sober decision on what to do with the remaining resources of the project requires a balanced look at what has and has not actually been accomplished. It also requires an appreciation of the changing development content of Citanduy II; what was desired in 1980 and what is needed now are not necessarily the same.

The sections below summarize the achievements and failures of the project. The primary conclusion is that although Citanduy II has achieved more than is generally appreciated, design problems turned what was intended to be a learning effort into an implementation struggle. The struggle to implement has overwhelmed opportunities to further the technical and administrative state of the art for approaching Java's upland or watershed problems. But most obstacles to implementation are

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* Most of the pipeline, for example, can be accounted for by over-budgeting and a major devaluation (Attachment 3), factors which should not prejudice an analysis of what has actually happened on the ground.

now removed and there are signs that implementing agencies are ready to experiment, learn and adjust. Although there are variety of projects underway in the growing GOI/donor program for upland areas, only Citanduy II has the staff and experience on the ground now to learn the lessons which have missed so far but which have applications common to all. A three-year extension of selected, scaled-down Citanduy II activities is recommended to further develop technical and administrative techniques for upland/watershed work in Indonesia. The Upland Agriculture and Conservation project, the GOI's Regreening program, local government in the Citanduy Basin, and the rumoured BIMAS Uplands would be the targets for application.

I. Output Achievements

At the output level, the project is not the failure that the pipeline suggests. Outputs can be divided into two categories:

Core Activities: the core outputs of Citanduy II were to be a) model farms and expansion of model farm technology in the upland areas of the Citanduy Basin and b) model irrigation blocs and irrigation systems rehabilitation in the Basin lowland. At present implementation rates, all output targets for these activities will have been met or exceeded by the PACD:

- 48 Model Farms, on target, demonstrating both terrace/food crops and agro-forestry technologies;
- Over 4,500 hectares of subsidized expansion of Model Farm technology, exceeding the target, with at least as much additional unsubsidized or "spontaneous" expansion;
- 28 or 30 High Yield Rice Model Blocs, exceeding the target of 22, established and operating;
- 10 rehabilitated irrigation systems, on target.

Complementary Activities: all other activities of the project were to complement or revolve around the core technologies introduced. Here the achievement of outputs has varied from fair to poor. Examples include:

- cropping research: results are evident in Model Farms and expansion areas. Greatest achievements have been the identification and popular acceptance of an improved rice strain and improved fertilizer regimes. Research, however, has focused primarily on food crops at the cost of other elements of upland farming systems. No mechanism to multiply improved seed varieties has been established. [Trials to that direction is being made for upland rice e.g. Ciwalen]
- local initiative projects: have been enthusiastically accepted by Kabupaten governments which have programmed some of the activity to areas where the project has otherwise failed e.g. seed multiplication and the provision of livestock. No targets were set but all loan funds will be exhausted.

- watershed development planning: aerial photography is complete for much of the Basin and prints are increasingly used in Model Farm and expansion planning; semi-detailed soil surveys have been carried out; micro and macro-scale hydrologic and sedimentation data is being collected; and the update of the Basin Master Plan is off to a fitful start. The integrity and the level of detail of data collected have been questioned but the gradually increasing use of it in planning has not.

- access roads: 61 km. of access roads will have been constructed compared to the target of 327 km. Most Model Farms and/or expansion areas will thus have no project-funded roads; it is not clear that many needed them in the first place.

- socio-economic research: was expected to provide data to "fine tune" project implementation. Delays in starting USESE mean this function will not be performed before the PACD. USESE is now underway, however; AARD upland technology "acceptance studies" are filtering in; and the Panawangan Impact Study is complete.

- training: of a target of 12,830 person weeks of training, only 3,241 have been provided to date.

- upland credit: began in West Java in April, 1984 and will begin in Central Java shortly. Given the delays in initiating the activity, and overambitious targets to begin with, only about 20% of the loan funds obligated will be lent to farmers by the PACD.

- nurseries: no numerical target was set for this activity. The Regreening program provided 5 permanent nurseries through the first three years and loan funds are now financing 5 replacements. Nonetheless, although loan funds allocated for nurseries have barely been tapped, shortages of grasses, improved seed, and seedlings have been chronic. The shortage will become serious in IFY 1985/86.

- other conservation measures: no targets were established and no proposals have been received for AID funding. Some of the work envisaged for this activity is carried out with non-project GOI funds through less cumbersome funding procedures than AID's.

That the project has produced the outputs it has is noteworthy considering the exogenous jolts it has faced:

- a major volcanic eruption in 1982;

- the division, halfway into the effort, of a key counterpart Ministry (Agriculture) into two (Agriculture and Forestry) both of which remain crucial to implementation;

- the absence of a stable consultant team and a permanent Chief of Party until the beginning of the third year of the project.

Endogenous problems have set the binding constraints however. In one way or another these reduce to problems of administrative complexity, overcentralization and an administrative overload of implementing agencies:

- complexity: there are twenty-five distinct types of activity implemented through four (initially three) ministries, two provincial governments, five kabupaten governments and two banking systems. In one year, at least forty-four separate GOI funding channels were used to finance project activities. In the absence of successful project-level coordination between implementing agencies, and without a consensus among implementors as to the purposes of many activities, responsibility to coordinate has devolved onto USAID and has, at times, deteriorated into a need to "control". BAPPENAS has assisted coordination over the past eighteen months but BAPPENAS' primary concern has been the disbursement rate. USAID has not been staffed to manage the large volume of small transactions, merely to cope, especially in the past year when impediments to many activities have been removed.

- overcentralization: particularly of activities implemented, ironically, by local government has created chronic breakdowns in communication between the field where implementation responsibility lies and Jakarta where decision-making authority is retained. A proposal from the Basin can take six months to reach USAID; a request for clarification another six months to return to the field, and so on. The need for "clarifications" proliferates because project activities are numerous and many AID administrative requirements to implement them are poorly understood along the long chain of GOI communications.

- administrative overload: is largely the product of the two factors above. It has been imposed particularly on P3RPDAS which implements a heavy Regreening schedule in addition to Citanduy II activities, on BANGDA for all local government activities, and, in the past year, on USAID.* Although GOI capabilities to manage the task have significantly improved over the years, this has been partly offset by an increasingly heavy implementation schedule : IFY 1985/86, for example, has 18 Models Farms compared to only 6 in IFY 1982/83.

In summary, despite serious impediments to implementation, the core Citanduy II outputs are being achieved but success in achieving output targets for complementary activities has been modest at best. Citanduy II, however, cannot be judged by its outputs. Measuring their impact requires a broader perspective.

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* for the first time in the project, for example, all counterpart DIP's (for IFY 1985/86) have been prepared prior to the beginning of the fiscal year. These will be converted to proposals for AID funding and submitted to USAID all at once. USAID will be hard-pressed to respond. The overload "shoe" is now on the other foot.

II. A Broader View

The Context

The project is an opening chapter in an accelerating GOI and donor program for watersheds and upland development in Indonesia. GOI attention to the Citanduy Basin was initially prompted by political instability in the area, into the early 1970's, as a result of Darul Islam activity. The Basin's susceptibility to floods suggested flood control measures. This was supported by USAID through the Citanduy I project. Citanduy I experience underscored the link of flooding and irrigation O&M difficulties in the lowland to sediment from upland erosion. Pilot upland agricultural plots were therefore started under Citanduy I in the late 1970's at Panawangan and Karangpucung to refine erosion-reducing upland terrace and cropping techniques developed in Solo earlier in the decade. Panawangan proved very successful both in increasing production and reducing erosion; Karangpucung less so.

The Ministry of Environment meanwhile put forward the concept of watershed development for Indonesia and called for "one basin, one plan." At the same time, the Directorate General for Forestry in the Ministry of Agriculture adopted a bare bones version of the Panawangan model as the flagship of its upland Regreening program on Java. Ambitious targets were set and generous funding provided for demonstration farms (UPSA's). UPSA planning was delegated to Forestry's P3RPDAS', one per watershed on Java.

Citanduy II incorporated both the "one basin, one plan" watershed approach and, in the basin upland, the Panawangan model. Conceived when "integrated rural development" was still in vogue, the focal points for integration were to be the soil and water resources of the Basin. In the uplands, Model Farm technology would conserve soil and increase agricultural production. In the lowlands, Model Blocs would demonstrate optimal use of irrigation water supplies (now) less disrupted by silt. Complementary activities such as access roads and credit would leverage the impact of these core innovations. Upland and lowland elements would be bridged by other activities such as a "watershed development planning" sub-component and an update of the 1975 Basin Master Plan.

To build local and national capacity to manage the watershed and to coordinate integrated development within the watershed's boundaries, the project would be controlled by local government. But because local government lacked the technical capability to plan the core activities, external agencies were involved: P3RPDAS for upland Model Farms and expansion (piggy-backed onto the ongoing Regreening program) and the Public Works Citanduy I project headquarters, Procit, for irrigation work. A series of "coordinating committees" and the incorporation of P3RPDAS into a project Watershed Management Development Center would assure that planning and implementation remained integrated under local government.

The forgotten feature of Citanduy II is that it was intended to be the first of a two-stage effort. The Project Paper and Loan Agreement make repeated reference to the project as a "learning and transition" stage. Neither document predicted national application of the project's experience but follow-on activity was expected in Citanduy itself, presumably full-scale watershed management built on the local capabilities increased by the project and in accordance with the project's update of the Basin Master Plan.

Now, more than four years into Citanduy II, the context has changed. On the GOI side, the Ministry of Environment has not been active in Citanduy II and the talk of "one basin, one plan" has subsided. Uplands and watersheds are accelerating concerns, however. Forestry, now its own Ministry, continues to fund the Regreening program heavily, although the inability of the program to achieve implementation targets on time has prompted a search for new directions. Forestry is institutionalizing its upland and watershed presence from the former P3RPDAS Regreening and Reforestation "project" entities to permanent Balai and Sub-Balai Konservasi Tanahs. Forestry is here to stay. Although definition of these units' responsibilities is still hazy, soil conservation and a continuing Regreening program will be high on the agenda. The Ministry of Agriculture (MOA) on the other hand, seeking to develop non-rice agriculture in general, buoyed perhaps by the MOA's high profile in the AID/World Bank UAC project, and lately encouraged by preliminary results of the Panawangan Impact Study, is beginning to talk of a "BIMAS Uplands." Although far behind Forestry, the MOA also wishes to nourish its soil conservation capabilities. Finally, ITB is attempting to initiate a Watershed Management degree course of study beginning this year. Clearly, upland and watershed work are rapidly gaining prominence within the GOI but different players are taking different approaches, some complementary, other competitive. For the time being the Ministry of Forestry has the lead over other ministries in technical experience and on-the-ground programs. But the long-term roles of the various players and their comparative advantages are still to be defined.

Among donors, USAID's approach to projects has changed since Citanduy II began: integrated area development approaches like Citanduy II are out of style; AID resources are now viewed as risk capital rather than capital stock. For this reason, and due to disillusionment with the inflexibilities of the Regreening program, USAID with World Bank support, has embarked on the UAC project which differs from Citanduy II in that it abandons the watershed concept and focuses on upland agriculture alone with a much greater role for both the Ministry of Agriculture (rather than Forestry) and for local government (rather than supra-governmental institutions). Other donors, such as the Dutch, are experimenting on a micro scale with erosion/cropping models but do not appear to orient their work towards programs implementable on a large scale. The World Bank, in contrast, is reportedly waiting in the wings for a vehicle to carry major investments in addressing Java's uplands or watershed problems.

Implications for Citanduy II

It is unlikely there will be a Citanduy III. The "learning and tra sition" that Citanduy II's designers called for therefore has meaning only (a) if local government within the basin chooses on its own to apply the experience of the project in the future, or (b) if the GOI and donors extract from Citanduy those lessons relevant to the upland/watershed programs elsewhere. The major failure of the project is that the potential for either possibility has barely been touched. The reason to extend the project is that both possibilities are still attainable. The lessons to be learned are ~~institutional~~ administrative and technical.

Administrative Lessons that have not been learned are of two types: how to integrate activities across the watershed and how to coordinate efforts within the upper part of the watershed. In both cases, much has been learned about what not to do but very few positive leassons have emerged.

At the watershed level, integration of planning and implementation has not occurred at all. Citanduy II is really two projects - an upland and a lowland. The Watershed Management Development Center has few links with Procit. Neither Procit nor the WMDC has a strong link to local government. Coordinating committees have not succeeded: the Basin Coordinating Committee rarely meets and has no real authority; the National Coordinating Committee is too far removed from the scene to play an effective role. Project consultants are divided along similar lines: although there is one direct contract for technical assistance, lowland consultants are provided by a sub-contractor almost independent from prime contractor control. At USAID itself, management of upland and lowland elements has been delegated to different technical offices. Mission interest and attention has been so dominated by the upland element that the lowlands and the watershed concept are forgotten; "watershed" has come to be synonymous with upland catchment areas rather than the original concept of all that lies between geographic divides including lowlands. Only two activities in the project remain to carry the watershed concept: a water budget and sedimentation study relating lowland river characteristics to sediment load and the update of the Basin Master Plan.

At the upper watershed level, integrated planning has succeeded to a limited extent but the delivery of an upland technical "package" (Model Farms, expansion, credit, access roads, nurseries, etc.) has been disrupted by poor coordination between the WMDC which plans Model Farms and expansion and local government which implements these and plans and implements everything else. Site selection of Model Farms and expansion areas, for example, was meant to be jointly carried out by the WMDC and local government. In practice, P3RPDAS makes the choice. Sites tend to be selected to fit the technology of the Model Farm rather than the technology appropriate to a chosen expansion area. Local government-planned activities therefore struggle to follow in the trail of P3RPDAS with the result that local government feels shut out of the effort and

its interest and commitment is accordingly reduced. Similarly with nurseries: the supply of grasses, improved seed and seedlings to Model Farms is of direct interest to P3RPDAS, but supplies to expansion areas are not. As a result, the availability of grasses, seed and seedlings for expansion farmers has always been short and will reach serious proportions in IFY 1985/86. The project has not pioneered techniques to bring the WMDC and local government together. Had the Citanduy Basin been in one province rather than straddling two, local government would have been in a far better position to assert itself. But the choice of Citanduy was originally political without considering the best environment to experiment with administrative mechanisms to plan and carry out "integrated" activities.

Technical lessons have fared better primarily because P3RPDAS and the WMDC have been managed by competent technicians. Learning, however, has fallen far short of its potential. This was pre-destined by the project design and exacerbated by implementation problems. Learning was primarily relevant to upland work. But the obligation of only $ 182,000 for upland agricultural research is one indicator that the project assumed there was little left to know technically*, a presumption paralleled by the belief that an update of the Basin Master Plan could begin in year three.

What has been found as the project has proceeded and was, incidentally, foreseen in the feasibility report on which the project design was based yet was not reflected in the design itself, is that there is a great deal to learn technically. The categorization of land treatment into two types based on slope ignores equally important considerations of soil type, soil depth and rainfall patterns. The project has not made much progress in further refining the technical criteria for determining upland soil/crop technologies nor has it expanded the inventory of technologies available as much as should be expected from such a large investment.

The design did recognize the potential significance of socio-economic variables in the success of upland technologies. Significant funds were obligated for socio-economic research. Implementation problems, however, prevented socio-economic research from beginning until very late in the project life. Thus, although there is a consensus that socio-economic considerations need to be taken into account in the siting of Model Farms and expansion areas, and in the choice of soil treatment and cropping patterns to introduce, these considerations have not been made in the project. Little progress been made in determining empirically what socio-economic variables are significant or in devising a practical method to take them into account in the planning process.

The delay of socio-economic research has meant that it is impossible to evaluate the validity of the agricultural technical package which was

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* compare to the $ 2.5 million AID/World Bank allocation under the UAC project.

assumed necessary to expand the core technology. Citanduy II assumed, for example, that subsidies of a certain level, access roads and credit were all required or, at least, all desirable. Yet, more than four years into the effort there is no systematically-collected empirical evidence to validate or reject any of these assumptions. In practise, for example, few Model Farm areas have really required access roads yet this may simply reflect the fact that the terrace/food crop technology that dominated the early years of Model Farming is most applicable to less critical land, land that tends to have reasonable access already. Unanswered questions abound: if subsidies are necessary, could the level be reduced? Does ownership of lowland sawah make an upland farmer more amenable to accepting long lead-time agro-forestry? How do the costs and benefits of Regreening UPSA's compare to those of Citanduy II Model Farms? etc.

Little has been learned about the sources of erosion. The causes of lowland flooding and irrigation siltation are variously attributed to upland agriculture, forestry practices, volcanic ash, poor road and building construction techniques, the widening of valley sawah by cutting away valley hillsides, etc. The project focused on three of these yet, despite a "watershed management planning" component to the project little more is known about their relative magnitudes than when the project began. There is much opinion, but little fact.

Finally, despite sediment traps in Model Farms and some expansion plots, no one can place a definitive accepted value - physical or economic - on the erosion prevented by Model Farm technologies.

If the effort in Citanduy had no relation to ongoing AID/GOI programs, there would be little reason to consider an extension of the PACD. The project would end a qualified success in spreading erosion-reducing agricultural techniques in the uplands of the Basin, an apparent success in rehabilitating irrigation systems and spreading high yield rice technology in the lowlands, but a failure in integrating or institutionalizing watershed management capabilities in Citanduy or nationally, and a failure in expanding the physical and socio-economic state of the art. But Citanduy is not isolated and there are strong signs that recent improvements in the project would permit many of the unlearned lessons to be learned over the next few years if the pace of implementation were slowed down, many activities dropped, and adjustments made to administrative arrangements.

III. Recent Improvements

Administrative: with the recent initiation of USESE and credit, and the first AID commitment for Local Initiative projects, the last major stumbling blocks to implementation of project activities have been removed. Most other activities have now been running long enough that funding and implementation are fairly smooth. All DUP's, for example,

for the upcoming fiscal year are ready on time for the first time since the project began. Both USAID and GOI attention can begin to shift to the quality and impact of outputs rather than the, till now, overwhelming task of attempting to extract inputs and outputs from the each other's system.

Attitudes: local government and Forestry attitudes are changing. Local governments took a long time to become aware of the project. Although there is still much that probably remains unclear, kabupaten government officials are more aware of project activities and more aggressive in asserting their interest in them. Bappeda officers in one kabupaten, for one example, are protesting the fact that P3RPDAS has selected UPSA sites without reference to local plans for the area.

Forestry is also changing. P3RPDAS in Ciamis has been pressured from Jakarta to work more closely with local Dinas' and BAPPEDA's. It is expected that Mr. Sopari, the present Director of P3RPDAS and the WMDC, will delegate his duties as manager of Regreening to a subordinate this year. His role will become more flexible and will provide more time to deal with non-Regreening issues. Regreening itself is changing. At least two of many potential changes are known: the addition of a special program of expansion for UPSA's (following the Citanduy II lead) and the narrowing of upland activities to a few "pilot mini-watersheds" as opposed to the hitherto scattered pattern. The first change is one of several changes to the program attributable to Citanduy experience*, a phenomenon that reflects Forestry's perception of Citanduy II as a testing ground. Including an expansion program in Regreening opens the door to better site selection and to more cooperative relationships with local government for both Regreening and for Citanduy II. Pilot mini-watersheds, to be pioneered by the Citanduy II 1985/86 Model Farms also opens the door to influencing Regreening nationally, and is in part an attempt on P3RPDAS' part to facilitate integration of Model Farms with complementary Citanduy II activities. It is easier to target credit, expansion subsidies, local initiatives and the like to well-defined, compact areas.

Technical Learning is gaining momentum, slowly and in fits and starts, in the three most important areas: developing steep slope and difficult soil technologies, land assessment, and determining the socio-economic variables in upland technology success. Model Farms for IFY's 1983/84, 1984/85 and 1985/86 are primarily a P3RPDAS variant of SALT agro-forestry. P3RPDAS is still uncertain of the model and feels it will take several more years to work out the kinks (including long-term measurement of erosion effects). The addition of one alternative to terracing/food crops is far short of the ideal "menu" of soil/crop technologies (better yet, an infinitely flexible set of "approaches"). But it represents a major step forward in Citanduy II which, if continued, could be transferred into Regreening.

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* others include an increase in extension staff per UPSA, a decrease in the target expansion area, methods for gully control.

Land assessment capabilities are improving with the growing reliance on aerial photographs for reconnaissance identification of problem areas and with the establishment by the WMDC of a data, planning and analysis laboratory. This is a facility long called for by project consultants and new to P3RPDAS but which, ironically, is only appearing after the departure of the consultants concerned.

Finally, USESE is now established and a research agenda tentatively agreed to which will systematically and empirically investigate the socio-economic variables which affect the success or failure of upland technologies. The first phase (1/85 - 11/85) will consist of measuring Model Farm and expansion success with a methodology comparable to the Panawangan Impact Study but applied to other Model Farms to isolate the pilot from the routine, a variety of agro-climatic conditions, and agro-forestry from terracing/food crops. The second phase (12/85-9/86) will examine in detail the socio-economic variables in success or failure. Third and fourth phases would require more time but ideally would consist of designing a practical socio-economic reconnaissance method, based on results of phase two, and applying it to Model Farm site selection and the selection of technologies to demonstrate. USESE's capabilities are not yet tested and a mechanism to incorporate socio-economic assessment into Model Farm site selection and the choice of technologies cannot be created by the PACD. But the preliminary steps are underway.

IV. Proposed Course of Action

Major changes cannot be made before the PACD. DUP's for the last full GOI fiscal year (1985/86) and the last full planting season under the project are already in final form. The return to the time and energy required to effect major changes in IFY 1985/86 would be small and the time and energy spent would preclude a concerted effort to effect longer term changes under an extension. Since most activities are now running relatively smoothly, it is suggested that 1985/86 essentially run itself. AID short-term attention should focus on:

- effecting an increase in nursery capacity;
- rationalizing Local Initiatives' selection and planning;
- increasing the disbursement rate;
- getting USESE off to a sound start and providing a venue to communicate USESE findings to project implementors and policy-makers;
- facilitating a sound update of the Basin Master Plan.

Long-term concentrated attention should focus on working out the details of an extension to the project. A three-year PACD extension is proposed to allow Citanduy II to exploit the opportunities to play the "learning and transition" role originally envisaged in the project design*. Specific objectives would be:

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* other options have been considered. See Attachment 4.

1. to learn the upland administrative and technical lessons that have been lost thus far;

2. to transfer lessons learned to local government in the Basin, to the UAC project, to the designers of BIMAS uplands, and to the Regreening program.

An extension rather than a new project or incorporation into the UAC project is required for several reasons. First, funding and management of most activities are now relatively smooth, relationships are established, and procedures are understood. Changing relationships and procedures could return the project to the implementation and funding treadmill from which it has just escaped. No new activities are proposed for the extension, rather a re-orientation of existing ones. An extension would not be a disguise for Citanduy III. Second, the Mission has strong reservations about commitments to P3RPDAS and the Regreening program. Uplands and watersheds are emerging as a major "sector" for attention in Indonesia. It is not clear yet which ministries will remain involved and what programs will survive over the long run. USAID has committed itself heavily to "upland agriculture" in the new UAC project, but forestry programs including estates and, potentially, "social forestry" may be important factors in upland employment and the control of erosion's effects on lowlands in the future. For all its faults, Regreening will, for the forseeable future, be the largest "upland" program going. An extension permits USAID to retain a hand in the pie and some leverage over Regreening without implying a new commitment.

The proposed extension would not include lowland activities or upland agricultural research. Both would stop at the present September 30, 1986 PACD. All lowland work should be completed by that time. Research would be stopped because to recast it as meaningful farming systems research would require great effort and funds and would probably duplicate what is already planned for the UAC project. Continued activities would include:

1. Model Farms: a limited number, at most four or five a year and only of the agro-forestry type in order to continue the development of the model. These would probably be located in P3RPDAS' proposed Pilot Mini-Watersheds. Reduced numbers should allow P3RPDAS to put more attention to each, including exploratory socio-economic reconnaissance ahead of time and greater cooperation with local government in site selection, especially the extension service. Every effort should be made to assure adequate provision of livestock. Approximate USAID cost: $5,000 per farm x 15 farms = $75,000.

2. Expansion: at a reduced rate commensurate with that of Model Farms. Approximate USAID cost: $120/ha x 100 ha x 15 farms = $180,000.

3. Nurseries are needed but it must be decided if new nurseries would be only for new model farms and expansion areas or for old areas too. Approximate USAID cost: $50,000 per year x 3 years = $150,000 (assuming only for new areas).

4. Access Roads, Erosion Control on Roads, and Other Conservation Measures should be combined into one budget item for local government discretion. Despite the questionable need for access roads to date, an emphasis on agro-forestry Model Farms may create a need. Counterpart funding should be flexible and consideration given to increasing the AID contribution from 50 to 70 or 75 percent. Approximate USAID cost: $400,000 (very rough).

5. Credit: should be continued for a minimum of three annual planting cycles in each province in order to explore questions such as the extent to which credit could substitute for subsidies in upland work, whether over the long term credit allows livestock populations to expand, whether or not farmers borrow repeatedly, whether upland credit needs to be distinct from general lines of credit, etc. Unless there is evidence that credit is being broadly abused or loans are not moving, credit programs in both provinces should not be drastically restructured; as long as funds are reaching the targets, there is a basis for empirical work on the questions above. Approximate USAID cost: $100,000 per province per year x 3 years = $600,000 (assuming funding for the full extension).

6. Watershed Development Planning: should continue to finance miscellaneous equipment costs for improved erosion monitoring and land assessment. Approximate USAID cost: $150,000.

7. District Upland Program Administration: should be recast as a fund for kabupaten BAPPEDA's to conduct evaluations, progress briefings, upland field days, etc. The objective would be to facilitate increased involvement across the board. Counterpart funding and management of funds will be problematic. Approximate USAID cost: $100,000.

8. Local Initiative Projects: should be continued but very tightly defined to direct funds towards identified project problems: seed multiplication, livestock, perhaps marketing. The purpose would be to give scope to local government to find solutions to these problems that might be used elsewhere. Annual allocations should be reduced and the number of projects decreased to 2 to 3 per kabupaten per year. The allocation of GOI counterpart funds should be rationalized either equally between kabupatens or in relation to the level of Model Farm activity per kabupaten. Approximate USAID cost: $75,000 per year x 3 years = $225,000.

9. Socio-Economic Research: USESE should continue with its primary purpose to: a) work with the WMDC and local government to begin applying socio-economic reconnaissance to the Model Farm site selection process, and b) monitor and evaluate agro-forestry costs and benefits, the credit program, the question of appropriate subsidy levels, access road/erosion control on roads/other conservation measure costs and benefits, possibly the comparative costs and benefits of Regreening UPSA's, etc. Approximate USAID cost: $300,000.

10. Training: should continue at reduced levels. In-country training should focus on a few well-defined basic courses relating to resource management and farming systems. ITB's watershed program should be considered for long-term in-country training. Overseas training would consist of maintenance of those departing prior to the PACD (number uncertain). The RMI training consultant, in-country until 9/85 and underemployed, should be tasked to put together a tight training plan and schedule for the extension. Approximate USAID cost $750,000.

11. National Steering Committee Secretariat Support: should continue for administrative monitoring of project activities and funds. Consideration should be given to moving the administrative unit to Ciamis. Approximate USAID cost $180,000.

12. TA: should inlude six persons:
    - Chief of Party (farming systems or land planning experience) - Catmur position;
    - Soil Conservationist/Engineer - Gander position;
    - Local Government/Planning - Swisher position;
        - West Java representative - Rachlan position;
        - Central Java representative - Slamet position;
    - PSC Social Scientist for USESE - Bartlett position;

    Approximate USAID cost: $50,000/month x 36 months = $1,800,000

13. Contingency/Miscellaneous (vehicles etc.)
    Approximate USAID cost: $500,000.

Total costs of the proposed extension would be approximately $5.4 million for activities after September 30, 1986. Given the estimated combined Loan and Grant funds available at that time (Attachments 1 and 2) of $10.7 million, a deobligation of about $5.3 million could be made before the extension began.

Organizational changes for the extension should be the minimum necessary to get the job done. Tentatively: disband the Basin Coordinating Committee but create a Board of Directors to the WMDC to include BAPPEDA I and II Pimpros and Mr. Sopari. The Board would not manage but would meet quarterly in Ciamis for briefings on progress to date and for discussions to coordinate core and complementary

activities. USESE should be represented. The National St
Committee and Secretariat should be retained but their rol
intervention only when problems arise that cannot be solve
Board of Directors level and to information briefings in o
catalyze applications to other upland programs.

Negotiations over the exact shape of an extension can
through 1985. Several things will be required in the nego

- continued support of Messrs. Roekasah and T.A. Sal
- a much better dialogue with P3RPDAS and Ministry of
  officials;
- much better communications with BAPPEDA's I and II.

Several principles will need to be maintained:

- a reduction of administrative and funding obstacl
  extension scenario. Counterpart funding channels
  re-defining. AID reimbursement shares may need t
  those activities involving kabupaten funds. RMI
  Swisher can be tapped to assist in any such deci

- the tone of the effort must change as much as pos
  collaboration. Communication with local governme
  government's understanding of project components
  important in this regard;

- the future roles of technical assistance consulta
  clearly defined and agreeable to counterpart imple

Negotiations will face a variety of constraints:

- the greatest risk is USESE. It appears to be off
  but the verdict won't be in until at least mid-198
  does not work well, the rationale for an extension
  considerably weakened.

- the proposed extension is heavy on technical assis
  $150,000 of Grant funds will still be available at
  PACD (Attachment 1). BRI billing rate guidelines
  problem. RMI has been mixed Grant and Loan funded
  may be set already. However, USESE has been compl
  grant-funded to date as have the PSC advisors to U
  would have to accept loan funds for these activiti
  in the meantime should be allocated carefully.

- at the moment, enough vehicles remain unpurchased
  Agreement to carry the project through a three yea
  Vehicles should also be allocated carefully in the
  period up to the PACD.

- technical assistance is a problem both before the PACD and, in the event of an extension, after. Most of the present RMI team will be gone by the end of 1985. A decision on who should stay and what they should focus on can only be made in light of the direction the Mission wishes to take with an extension. Decisions are needed quickly to retain coherence to the team's work. A decision is also needed on whether or not to seek a continuation of the RMI contract for an extension or to re-bid. The cost of a continuation, excluding the USESE PSC, would be about an additional $1.4 million (less a potential $0.7 million predicted unspent from the present contract).

- a smooth transition into the extension will require final decisions on extended activities by January 1986 at the very latest, preferably September, 1985. GOI planning for the 1986/87 planting cycle activities should be underway by that time in order to enter the IFY 1986/87 budget.

- AID auditors have been promised a Mission decision on Citanduy II deobligations by Fall, 1985.

- one long-term trainee is now overseas and might not complete his course by the PACD. Two more long-term training nominees could depart soon and the GOI is preparing to nominate a large number more. A decision is needed now on whether to permit this training to proceed and, if so, how to fund it given that it would surely extend beyond September, 1986 and that a PACD extension could not be formalized until the end of 1985.

- the GOI, aware of the large pipeline, and aware of the PACD is pushing proposals to extend and/or to soak up unused funds in the meantime. It becomes increasingly difficult to say no without an alternative proposal. A meeting of the National Steering Committee has been planned for mid-February to address the question of extension. It would be useful to have a sense of USAID's intentions by that time.

SH/joy:1/29/85

Attachment 1

Citanduy II : Unexpended Grant Funds at PACD

	Obligation	Committed To Date	Anticipated Commitment	Projected Pipeline
Major TA : RMI Contract	3,318,000			
	3,318,000	3,318,000	0	0
(see explanation under Loan RMI TA section)				
Socio-Econ. Research TA (PSC's)	505,000			
King, Bartlett, housing		296,000		
Bartlett and/or successor, housing			164,000	
	505,000	296,000	164,000	45,000
Socio-Econ Research (USESE)	310,000			
unspecified		1,000		
first 3 mos. USESE operations		42,000		
operation costs mos. 4-12			69,000	
operation costs mos. 13-23			151,000	
	310,000	43,000	220,000	47,000
Bureau Reclamation Expert	9,000	9,000	0	0
Credit Adviser Patten	27,000	27,000	0	0
Basin Coordinating Committee	4,000	4,000	0	0
Contingency	77,000			
Panawangan Impact Study		20,000	0	
	77,000	20,000	0	57,000
TOTAL UNEXPENDED AS OF PACD				$ 149,000

Attachment 2

Citanduy II:
Unexpended Loan Funds at PACD

	Obligation	Committed To Date	Anticipated Commitment	Projected Pipeline
Model Farms	551,000			
81/82, 82/83, 83/84 MF's		86,000		
85/86 MF's			78,000	
	551,000	86,000	78,000	387,000
(assume split MF's 82/83 will not be proposed for commitment)				
Nurseries	576,000			
5 permanent 84/85-85/86		85,000	0	491,000
(assume no stepped up effort to provide nurseries in 85/86)				
Access Roads	1,032,000			
Tasik, Cilacap		81,000		
83/84 Kuningan			15,500	
84/85 Kuningan, Tasik, Cil.			78,000	
85/86			283,000	
	1,032,000	81,000	376,500	575,000
(assume no more proposals prior to 85/86)				
Other Conservation	349,000	0	0	349,000
(assume hydram not submitted or not approved)				
Erosion Control Roads	241,000	0		
84/85 (PIL 62)			29,000	
Ciawi-Ujung Barang			13,000	
85/86			36,000	
	241,000	0	78,000	163,000
Expansion	663,000			
82/83, 83/84, 84/85		245,000		
85/86			275,000	
	663,000	245,000	275,000	143,000
Credit	2,454,000			
first year W. Java (4/84-4/85)		110,000		
first year C. Java (1/85-1/86)			110,000	
18 more mos. at same W. Java			165,000	
9 more mos. at same C. Java			82,500	
	2,454,000	110,000	357,500	1,987,000
(estimates very rough - no data on rate of lending)				

	Obligation	Committed To Date	Anticipated Commitment	Projected Pipeline
Local Initiatives	504,000			
84/85 PIL 58		112,000		
84/85 PIL 58 earmark			6,700	
85/86			338,000	
retroactive 83/84			47,300	
	504,000	112,000	392,000	0
(assume use balance after 85/86 commitment and any additional fall out from unapproved 85/86 to retroactively finance some 83/84 work)				
Upland Research	182,000			
83/84, 84/85		149,000		
85/86			69,500	
	182,000	149,000	69,500	-36,500
Model Blocs/Extension	383,000	0		
retroactive 82/83-85/86			124,000	
	383,000	0	124,000	259,000
Irrigation Rehabilitation	3,226,000			
Ciloganti		90,000		
5 additional main systems			285,000	
4 tertiary systems			80,000	
	3,226,000	90,000	365,000	2,771,000*
* (assumes AID adheres to earlier agreement with P.U. that AID will only finance 6 mains and 4 tertiaries. If AID changes course and finances the original target 10 mains as well as the 4 tertiaries, an additional commitment (and consequent reduction of projected pipeline) of $ 457,000 would be required)				
O & M Equipment	123,000	0		
PIL 62 quality control equip.			28,000	
anticipated proposal			86,000	
	123,000	0	114,000	9,000
Pataruman Shop Equipment	125,000			
PIL 32		25,000		
proposal at USAID			100,000	
	125,000	25,000	100,000	0
(assume issues with proposal now at USAID cleared up)				

	Obligation	Committed To Date	Anticipated Commitment	Projected Pipeline
Watershed Development Planning	1,226,000			
AARD Agro-Econ Research		121,000		
Aerial photography		455,000		
Scientific Equipment		114,000		
Hydrological Equipment (PU)		98,000		
WMDC Office Equipment		44,000		
Watershed Plan Preparation			250,000	
Additional Copies Aerial Photo			5,000	
	1,226,000	832,000	255,000	139,000
(assumes P3RPDAS proposal for Upper Watershed Plan preparation in 85/86 approved by USAID)				
Socio-Economic Research Unit	6	0	0	6
Vehicles	872,000			
Vehicles to Date		461,000		
12 vehicles @ $ 10,000 per			120,000*	
	872,000	461,000	120,000	291,000
* (assume only additional procurements before PACD are 8 to PU as promised 6 mos. ago but to include the 2 PU requests for District Irrigation Sections, one more to PU to cover the proposed construction supervisor for South Lakbok design, and 3 to WMDC to assure transportation for consultant staff)				
Training (non-RMI)	1,455,000			
various		198,000		
proposed PU in-country LT			200,000	
estimated ST			200,000	
	1,455,000	198,000	400,000	857,000
Training (RMI)	600,000			
various		243,000*		
anticipated LT overseas (2MS')			240,000**	
anticipated miscellaneous in-country			75,000	
	600,000	243,000	315,000	42,000
(accrued expediture to date, not commitment ; ** projected expenditures, not commitments).				
RMI Contract TA	1,910,000			
signed contract ($ 1,893,000)		(see below)	1,600,000	
	1,910,000	(see below)	1,600,000	310,000

(assume continued team levels till PACD : expends $ 250,000 per quarter. Thus total remaining expenditures (after 1/1/85) of $ 1.75 million added to expenditure to date of $ 2.75 million (G) and $ 200,000 (L). Total projected expenditure is therefore $ 4.7 million : consisting of $ 3,318,000 Grant and about $ 1,400,000 Loan. An additional $ 200,000 is included for expected costs of South Lakbok design supervisor.)

	Obligation	Committed To Date	Anticipated Commitment	Projected Pipeline
Contingency/Inflation	2,422,000			
Apiculture experts		2,000		
* PASA/PSC Soil Conserv.		306,000		
Coor. Committee (Secr.)		172,000		
* Watershed Assessment		47,000		
	2,422,000	527,000	0	1,895,000

(* fully disbursed, not commitment only)

TOTAL UNEXPENDED AS OF PACD $10,632,000

Attachment 3

Main Overbudgeted Activities

Activity	Obligation	Actual Cost	Amount Over budgeted
Irrigation rehabilitation	$ 3,226,000	$ 455,000	$ 2,771,000
Contingency/ inflation	2,422,000	527,000	1,895,000
Credit	2,454,000	1,000,000*	1,454,000
TOTAL	$ 8,102,000	$ 1,982,000	$ 6,120,000

* hypothetical cost of credit if credit had been underway for five of the six years of the project at present estimated annual lending rate of $100,000 per province per year. Actual "actual costs" will be only about $460,000 due to delays in initiating the credit activity.

** devaluation gains not accounted for but large untapped contingency/ inflation line item (actually tapped thus far for unforseen activities only) may reflect devaluation savings.

Attachment 4

Other Options

1. Stop all activities at the PACD:

   - pro: easiest on management and the auditors; allows full attention to the UAC project.
   - con: opportunity cost of the proposed course of action
   - conclusion: not recommended unless proposed course of action falls through. Even in that event, consideration would have to be given to an extension to assure full funding of subsidies for IFY 1985/86 expansion and for the present and anticipated overseas trainees. Latter could be transferred to GPT II via deob-reob.

2. Assist local government to implement the updated Master Plan:

   - pro: builds local government capacity in resource planning and management;
   - con: Master Plan update is still poorly defined;
   - conclusion: not recommended but not to be rejected completely until the planned content of the update is known (February/March, 1985).

3. Fund an inventory and library of tropical upland farming systems and erosion research results, overseas and domestic:

   - pro: Citanduy II agronomy researchers were afraid of duplicating others' work. Since there is no central collection in Indonesia for this type of information, there has been no way to know. Such a library would benefit other emerging upland/watershed programs in the country;
   - con: a. would raise a conflict between MOF and MOA as to where it would be located;
     b. a similar scheme is already planned under the UAC project;
   - conclusion: not recommended unless UAC plan falls through.

4. Assist to develop a slope/soil type/soil depth/precipitation classification system:

   - pro: extremely useful for MOF and MOA in all future upland work;
   - con: a. difficult to ever reach agreement between MOF and MOA;
     b. would require a consultant with an unquestioned high reputation to Indonesians - difficult to find;
   - recommendation: worth considering and discussing with GOI.

ANNEX
CITANDUY II ASSESSMENT
(June, 1985)

TABLE OF CONTENTS

UPPER WATERSHED DEVELOPMENT

Introduction According to the Loan Agreement

Serious problems of deforestation and soil erosion have received increasing attention by the Government of Indonesia since efforts to rehabilitate critical land, especially in the upper watershed began in 1962. Implementation was started on a national scale in 1967/1968 in several selected watersheds and in 1971 a pilot soil conservation project was established with checkdam construction to catch sediment as the main activity.

The Upper Solo Watershed Management and Upland Development project was implemented from 1973 to 1979. A soil conservation pilot project in the Ciliwung Subwatershed, partly financed by the World Bank, began in 1976. Also beginning in 1977 was another soil conservation pilot project, at Panawangan in the Citanduy Basin.

In the third Five Year Development Plan (1979/1980 - 1983/1984) the main national soil rehabilitation effort is through the INPRES program, with a target of about 300,000 ha. of reforestation and 700,000 afforestation per year. Included in the afforestation is construction of contour terraces and 200 checkdams. Reforestation in the watershed began in 1964.

The Panawangan Pilot Watershed was initiated in conjunction with an upper watershed management study financed by AID under the first phase Citanduy River Basin Development Project Loan. It involved the Citanduy Project Office of the Ministry of Public Works and project consultants, the Ciamis District government, and P3DAS.

The demonstrated success of the Solo and Panawangan pilot watershed projects has provided the technological and institutional framework for development and execution of a watershed development program which moves beyond pilot implementation into a sustained basin-wide program to increase upland agriculture and livestock production while simultaneously reducing soil erosion by application of improved conservation practices. The Citanduy Basin Upper Watershed project described below combines initial extension of the existing package of upland agriculture and conservation technology with an intensified effort to improve planning for development of the 290,000 ha. Citanduy upper watershed over the longer term.

OBJECTIVES According to the Loan Agreement

Broad objectives of the proposed Citanduy agricultural development program are to reduce damage and loss of productive capability due to soil erosion to the uplands and, at the same time, to increase agricultural production.

More specifically the upper watershed project objectives are to:

- develop and implement an integrated multi-disciplinary plan and approach for solving problems of the Citanduy watershed in a manner which maximizes the use of local government resources.
- make farmers aware of improved upland technology, and to convince them to adopt the total package of technology as appropriate to their specific situation.
- implement a successful basin-wide upper watershed production and conservation program that encourages acceptance of appropriate conservation and production technology through local participation -- including former contributions of labor -- and that provides for the long-term staged development of the upper watershed of the Citanduy Basin.

Agricultural Technical Package Component: General Description According to the Loan Agreement

While continuing the on-going reforestation and afforestation (greening) program to rehabilitate critical areas, the project involves the design, development and delivery of a package of upland conservation and production technology to approximately 20,000 farm families, on 10,000 ha. over a period of five years. The project is the first phase of an expanded program that will ultimately attempt to introduce modern conservation and upland production practices to all the farm families, estimated at 240,000, who make their living from the 290,000 ha. upper watershed of the Citanduy Basin. During the first phase, which should be viewed as a learning and transition phase prior to the intensive basin-wide dissemination of the package of technology, the upland package of technology would be perfected through extensive field research at five locations in the basin. A network of model farming demonstrations will be established and continuously maintained in farmers' fields throughout the basin.

Nurseries will be established at selected sites within the basin to produce and supply on a reliable basis the grass and trees required for adoption of the upland farming model. A credit system will be developed and tested to provide farmers the working capital needed to purchase the necessary component inputs of the package of technology, particularly livestock and crop inputs such as seed, fertilizer and pesticides. Under the project an extensive program of training will be developed for technicians and farmers in upland farming systems, conservation practices and community development. Finally, low grade, labor intensive feeder roads will be constructed to facilitate access to each of the model farming demonstrations and the hinterland surrounding each of the models.

To manage the project an integrated management structure will be created at the basin level, composed of personnel drawn from the various Directorate Generals and agencies of the MOA and local government. This integrated project management organization will be responsible for the design and implementation of the upper watershed project. This integrated agriculture office will also be responsible for management of agriculture sector activity in irrigated food production subproject and the preparation of an upper watershed master plan and program. This master plan and program would govern the basin-wide dissemination of the program during the second phase. The master plan will incorporate the results of the experimental research and demonstration work carried out during the first phase as well as utilize topographic, land suitability and socio-economic data to be developed with inputs made available during the first phase.

Model Farms Sub-Component According to the Loan Agreement

The model farms will consist of about 10 ha. of land where terraces at the specification of P3DAS, such as those built in Panawangan, will be constructed on slopes below 50%. The "Agriculture Technical Package" will include grass revegetation of the terrace risers with improved grass seed such as Brachiana brizantha or B. decumbens, fertilizers and insecticides for three cropping cycles (October to March first crop, March to June second and June to September third crop).

The livestock component of the technology package will depend on the volume of grass produced on the terrace risers and other available forage.

On lands over 50% slope, trees such as clove, Parkia sp., Citrus spp., Albizzia Falcata and Leucaena spp. and grass under the tree canopy, will be planted. The trees and grass will be given free to the farmers. Those farmers with land over 50% slope containing adequate improved forage to maintain livestock after six months of planting will qualify for the livestock program. Fish ponds will be established if water and other conditions are adequate. If fish ponds are already established, they should be rehabilitated to Directorate General Fisheries specifications and stocked with fingerlings as recommended by the Directorate General of Fisheries. Farmers in the model farms are expected to become a source of technology and seed for other farmers in the surrounding area.

During the first year, four Model Farms will be established, two in the Cimuntur Subwatershed and two in the Upper Citanduy Subwatershed. The Panawangan and Karangpucung Pilot Watersheds will also become Model Farms; however for these two model farms only those items not yet completed will be provided. For example the livestock program at Panawangan is not yet completed and the cropping system needs to be maintained and upgraded for the next five years. The same applies to Karangpucung plus grass revegetation of terrace risers. A number of extension workers will be assigned to each extension area where there is a model farm. Polyvalent agriculture extension workers should be assigned to each Model Farm during the first year of operation.

Project Sub-Component: Model Farms
Implementing Agency: P3RPDAS (DIPERTA/DISBUN DT. II)
(Rp.000; US$ 1.00 = Rp. 1,000)

Performance Against Physical and Funding Targets

INDONESIAN FISCAL YEAR	LOAN FUNDS ORIGINALLY BUDGETED		TOTAL ACTUAL GOI BUDGET	IMPLEMENTATION TO DATE		USAID COMMITMENT		REIMBURSEMENT TO DATE	UNUSED LOAN FUNDS
1981/82	4 ea	37,700	17,988	100%	4 ea	5,640	PIL 7	5,640	32,060
1982/83	6 ea	52,300	51,360	100%	6 ea	8,703	PIL 17	1,455	43,597
1983/84	8 ea	82,700	65,100	97%	8 ea	30,222	PIL 18/20	19,870	52,478
1984/85	12 ea	141,700	96,992	66%	12 ea	41,353	PIL 49/69/72	0	100,347
(Cumulative through 84/85)	(30 ea)	(314,000)	(231,450)	(90%	30 ea)	(85,918)		(26,965)	(228,020)
1985/86	18 ea	237,400	143,591	0%	18 ea	64,912	PIL 70	0	172,488
TOTAL	48 ea	551,400	375,041		48 ea	150,830		26,965	400,570

Explanation/Analysis:

1. Physical implementation is on Loan Agreement target.
2. Expenditures lag behind Loan Agreement target due to lower unit cost of Penghijauan Program (UPSA) contribution.
3. USAID commitments up-to-date and on target (50%) except 82/83 MF's. Agro-forestry inputs 85/86 proposal from P3RPDAS should be complete by December 1984, and submitted to USAID for commitment by March 30, 1985.
4. Reimbursements have just been brought up-to-date with the exception of 82/83 model farms which must be evaluated jointly for performance as a new MF design format was used (5 of the 6 MF's were 10 ha. each but not a contiguous 10 ha. AID refused to reimburse until there was a joint evaluation of the impact of non-contiguous MF's). 84/85 first year expense can be reimbursed in March 1985. FAR procedure for reimbursement has worked well but will stretch capacity of USAID to field check all 18 1985/86 MF's.
5. Unused loan funds projected at Rp. 386,550,000 due to #2. Policy alternatives include:
   a. extension of project time to utilize funds,
   b. increasing inputs to model farms,
   c. both a. and b.
   d. re-allocation of funds to other activity or to new variants of traditional MF's.
6. Remedial steps:
   a. Re-submission of agro-forestry for 82/83.
   b. Joint USAID/DGRRL Evaluation of 82/83 MFs.
   c. Submission of inputs costs for 84/85 MFs (1st year) and 83/84 MFs (2nd year) to USAID for reimbursement.
   d. Submission of 85/86 MFs proposal to USAID.

#1810P:6/30/85

Assessment
Model Farms
Summary

ANTICIPATED OUTPUTS	PROGRESS-TO-DATE	PROBLEMS AND ISSUES	RECOMMENDATIONS
48 demonstrations of about 10 ha of contiguous upland, consisting of under and over 50% sloping land; grasses, waterways and drop structure, seeds, fertilizer, pesticide, tree seedlings, small ruminants fish ponds, and beehives. Extensionists per Model Farm to include one PPM and five PPL's.	a. 30-10 ha model farms constructed (25 contiguous, 5 non-contiguous), 18-10 ha model farms (contiguous) planned. b. All demonstrate terrace technology with grasses and waterways, and improvements to existing upland food crop agriculture. Only limited demonstration of small ruminant husbandry and fish husbandry. c. Year 3, 4 and 5 MF's are demonstrating 50% slope agroforestry focusing on grasses, fiber-leguminous trees, and horticulture trees. d. Result: 1,157 ha of subsidized expansion. 4,017 ha of spontaneous expansion (to be subsidized). Substantial but unquantified spontaneous expansion which will not be subsidized but which demonstrates part or all of the new technology.	a. Technical, conservation planning: MF's are most successful on good soils, less so on marginal soils; nature of activity is expanded production with erosion prevention; land rehabilitation is not yet addressed (critical areas). Intensive technical planning is focused on MF, not potential expansion area. Thus the ultimate target sometimes forgotten. b. Socio-economic planning: absentee land holdings, scattered land holdings, size of landholdings, off-farm employment, labor mobility, among others, all affect success or failure of MF, but no formal socio-economic reconnaissance is included in current MF planning. c. Farming systems: technology introduced is traditional with improvements; improved seeds are limited because: a) lowland varieties are not applicable to uplands, b) improved varieties are not available in basin or are not available at planting season, and c) local upland varieties are not yet multiplied. Without more socio-economic planning, without increased availability of improved seeds, and without a larger inventory of soil & crop alternatives, MF's are addressing an important part but not all of upland farming systems. d. Schedule pressure: pressure on WMDC to meet MF implementation targets while P3RPDAS is simultaneously responsible for meeting ambitious Regreening targets reduces WMDC's scope to innovate in placement or designs of MF's.	Reduce MF implementation targets but increase flexibility to select sites, apply and monitor variants on the basic terrace & agro-forestry models. Included should be: a. Focus and intensify technical planning in high erosion areas of basin (integrate with watershed development planning) with rehabilitation of eroded lands and erosion prevention in highly erodible areas. b. Perform socio-economic reconnaissance (integrate with USESE and local government) as an input to technical planning. c. Increase small ruminants, horticulture tree cropping, industrial tree cropping, fish husbandry, improved seeds and seedlings, in farming system. d. Continue to increase participation of farmers in MF planning. This has increased due to pre-planning consultations with farmer groups but can be encouraged further. e. Intensively monitor progress of year 3,4 & 5 agro-forestry MF's: acceptance, income yield, erosion. Included could be: a. Forestry's planned upper watershed pilots; b. Citangtu agro-forestry model on marginal lands; c. Other experimental trials/ demonstration via Dinas' Perkebunan, Peternakan, Perikanan.

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Assessment
Model Farms

DETAILS OF ANTICIPATED OUTPUTS	PROGRESS-TO-DATE	PROBLEMS AND ISSUES	RECOMMENDATIONS
Soil and water conservation technology 50% slope and on land 50% slope.	a. Achieved targets within time frame. b. Upland extension significantly strengthened (see extension). c. Good forward linkage to expansion areas. d. Encouraged group farming.	a. Planning & implementation in first 2 years according to greening standards, i.e., UPSA. rather than those of the Loan Agreement. b. Third and fourth year indicated semblance of farmer participation in planning and implementation but still below expectation. Fifth year is according to expected procedures, where Extension is clearly in charge of MF & of expansion area implementation although not involved in MF planning. c. Insufficient grass cuttings in some areas due to lack of transportation; delay in delivery of cut grass renders it dry and unfit for planting, thus prolonging exposure of risers to rain and erosion. d. Technical conservation tools for planning are still not in place for overall strategic planning (Aerial photos, land-use, soil maps, ortho-photo maps, etc.)	a. Provide transport facilities for grasses; grasses should be cut only when ready to be transported and planted. b. Provide livestock according to Loan Agreement. c. Encourage BPP/project to provide more training for farmers on land use. d. More model farms should be established appropriate to steeply sloping lands. e. Continue the involvement of farmers in planning and implementation; let them decide for themself but with adequate guidance from extension. f. More seedlings of perennials should be made available.
Three Food Cropping Cycles.	a. Dependent on weather; not practical; but nonetheless attempted by large section of basin. b. Improved production from increased crop population.	a. Project inputs of improved seeds etc. not delivered on time. b. Improved and quality seeds and planting materials not readily available. c. Seed multiplication scheme not in effect yet.	a. Focus more attention on 2 primary croppings. b. Emphasize relay and cover croppings. c. Encourage green manuring and use of lantoro & legume incorporating into the soil. d. Try the farmer as a seed grower.

Assessment
Model Farms

DETAILS OF ANTICIPATED OUTPUTS	PROGRESS-TO-DATE	PROBLEMS AND ISSUES	RECOMMENDATIONS
Small Ruminant Husbandry.	(See Problems.....)	a. Unsatisfactory implementation; not according to Loan Agreement of 10 hd/ha on 50% slopes &15 hd/ha in 50% slopes. Only 16 sheep per MF (10 Ha) in Year II of implementation. Regreening standard is too low: Regreening treats livestock as a residual use of any unallocated funds rather than integral part of package. b. Feeds and feeding trials lacking.	a. Provide livestock according to Loan Agreement. b. Select better breeds of sheep/goats, esp. fattening types. c. Emphasize better feeds & feeding i.e., concentrate feeds to supplement grass and legumes. d. Better husbandry & management. e. Encourage applied livestock research as part of project research agenda.
Fresh Water Fisheries (if possible).	(See Problems .....)	a. Not consistently implemented, no DG Fisheries representative WMDC. b. Many upland areas are not suitable for fish ponds. c. Non-availability of fingerlings.	a. Evaluate whether fish ponds can play significant role in upland package. b. Re-focus to lower areas with water.
Village cadres for Soil & Water Conservation, Cropping Systems, Animal Husbandry, Fisheries, Farmer Cooperative Group Organization and Management.	(See Problems .....)	a. Village conservation technician concept foreseen in Loan Agreement was not implemented. b. Extension workers are often not capable of coping with the demands of developing farmers groups as well as delivering extension technical advice. c. Kontak Tani frequently appointed from outside and/or dominate the group. d. Kepala Desa frequently calls the shots.	Develop Kontak Tani as para-professionals for soil and water conservation through more training by the project and by BPPs with support from local government.
Well trained and experienced extension personnel.	(See Assessment of Upper Watershed Development extension on pages 26-27)		

CONCLUSION
MODEL FARMS

1. Model farming, in its terracing mode, has proved very effective in technology dissemination. Technical planning has improved steadily. Participation by farmers in planning has improved too although it is still below desirable levels. With continued extension and incentive, be it subsidy or credit, terraced expansion areas will continue to grow well beyond the PACD with or without new model farms. The fact that "spontaneous expansion" can be found 15 km. or more from Model Farms today suggests that further construction of terracing Model Farms may no longer be necessary in the Basin. However, many areas of the basin suffer from erosion which cannot be corrected with the terrace/food crop approach, due to soil and land status and many other factors. Integrated with the progressing watershed development planning, these areas should be identified and site specific trials and demonstration ("model farms") should be planned and implemented. If successful, expansion of these new demonstrations should be programmed.

2. Any continued activity will require special attention to:

   a. A greater role for local government in Model Farm (ultimately expansion area) site selection;

   b. A greater role, in the site selection process, for socio-economic considerations;

   c. A greater role for socio-economic considerations in the selection of farming systems to be demonstrated;

   d. Timely delivery of inputs, including sufficient grasses and improved seed and seedlings.

Upland Technology Package Expansion Program Sub-Component According to the Loan Agreement

During the second year of watershed project activities, those farmers in the vicinity of the Model Farms will hopefully want to duplicate that program. For that purpose polyvalent extension workers and a greening field worker will be available (from the original staff assigned to each Model Farm during the first year of operation) to provide technical advice. The farmers need to be organized into groups (those farmers operating in a mini watershed or hydrologic unit) since terraces must be built along the mountain side as a continuous terrace regardless of property boundaries so that excess water can be discharged into common waterways. The labor to build the terraces must be provided by the farmers without cost to the project. Grass from the nurseries will be made available at no cost to the farmers who have completed their terraces to project specification. Those farmers who have completed their terraces and revegetated the terrace risers will qualify for trees at nursery cost and free grass for their land over 50% slope. They will also qualify for free seeds of the same varieties as those used in the Model Farms, and credit to purchase fertilizers and insecticide at the rates recommended in the Model Farms. Six months after the grass has been planted the farmers will qualify for credit to purchase sheep or goats provided that the grass is well established and adequate forage is available to feed the livestock. Credit for the second and third crops should also be made available to the farmers.

Project Sub-Component: Upland Technology Expansion
Implementing Agency: BAPPEDA (DIPERTA DT II)
(Rp.000; US$ 1.00 = Rp. 1,000)

Performance Against Physical and Funding Targets

INDONESI. FISCAL YEAR	LOAN FUNDS ORIGINALLY BUDGETED		TOTAL ACTUAL GOI BUDGET	IMPLEMENTATION TO DATE		USAID COMMITMENT	REIMBURSEMENT TO DATE	UNUSED LOAN FUNDS
1981/82	40 ha	4,200	0			0	0	4,200
1982/83	260 ha	29,400	41,061	100%	262 ha	16,101 (PIL 21,40,41)	16,101	14,821
1983/84	800 ha	103,200	143,235	98%	895 ha	52,547 (PIL 33,48)	0	50,653
1984/85	1400 ha	203,200	412,500	50%	1,602 ha	174,000 (PIL 59)	0	29,200
(Cumulative through 84/85)	(2500 ha)	(340,000)	(596,796)	(56%	2,759 ha)	(242,000)	(16,101)	(98,000)
1985/86	2000 ha	322,600	612,500	0%	2,273 ha	277,250 (Est.)	0	45,350
TOTAL	4500 ha	662,600	1,151,296		5,174 ha	519,250	16,101	143,350

Explanation/Analysis:

1. GOI budget & expenditure is ahead of Loan Agreement target after late start (no implementation 81/82) but implementation still late (83/84 68%, 84/85 0%).
2. USAID Commitments are behind schedule, Cilacap 83/84 MT II; all kabupatens, 84/85. Proposals are formulated and upon submission to USAID, all commitments will be up-to-date; commitments are slightly below 50% target, approx. 45% due to ineligible costs such as honoraria, travel, and other expenses. 1985/86 proposals are drafted, and should be approved by province and central government by December 2, 1984; commitment by USAID by March, 1985. Reimbursements delayed by slow submission of requests to USAID, now being corrected by BAPPENAS.
3. Unused loan funds projected at Rp. 132,447 equivalent to 300 ha, in spite of surpassing 4,500 ha Loan Agreement target.
4. Remedial steps:
   a. Complete PIL proposals for 83/84.
   b. Complete field implementation for 83/84 and 84/85.
   c. Process reimbursement request for 83/84 by March 85.
   d. Process pre-financing budget for 84/85.

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Upland Technology
Assessment

Anticipated Outputs	Progress to Date	Issues & Problems	Conclusions/Recommendation
The establishment of private upland agriculture land treated with soil and water conservation and farming system technology. Target: - Subsidized : 4,500 ha - Spontaneous : 5,000 ha TOTAL : 9,500 ha up to PACD	- 262 ha fully implemented in 3 Kabupatens. - 895 ha fully implemented in 4 Kabupatens. - 1157 ha currently being implemented starting Dec. 84; complete Nov. 85. - 2415 ha programmed for 85/86 implementation starting Sept. 85, completed May, 1986. - Projected 5,174 ha of subsidized expansion by PACD utilizing $530,000 of loan funds, involving 155 farmer groups and 2003 farmers through IFY 83/84. Projected by PACD: 497 farmer groups and 14,386 farmers. - Of 5,174 subsidized hectares, it's anticipated 3,104 will be terraced while 2,070 will consist of permanent vegetation (agro-forestry). - Unsubsidized expansion ("spontaneous") is difficult to define since farmers often "expand" part but not all of the technology and since one of the motives for spontaneous expansion is the hope that a subsidy might eventually be received. Nonetheless, there is general agreement that non-subsidized expansion will meet or exceed Loan Agreement targets.	- Inputs: Management of project through government budgets (purchase of timely, quality ag. inputs) has proved most difficult. Yet subsidized inputs are a major incentive. Seed production by project or local farmers & direct distribution could be easier. - Site Selection: In theory at the discretion of local government but WMDC (P3MPDAS) siting of MF determines general location while preselection by P3MPDAS of locations for its $60/ha waterway subsidy for expansion areas. Farmers, not extension service, take the initiative to expand MF technology. Subsidy arrives later. (Loan Agreement expected expansion to occur one year after MF but farmers usually "expand" in same year as the MF). Since soil/slope conditions very dramatically within short distances, the technology they adapt is not always technically suited to their land. Nor, without socio-economic survey, is the technology demonstrated necessarily optimal from the farm household point of view. - Conservation: Activity is primarily land improvement, foodcrop expansion, & erosion prevention. But areas selected were not necessarily a source of heavy erosion/sedimentation/run-off to begin with. Because of project's emphasis, activity is predominantly terracing. Grasses and to lesser extent waterways & drop structure are inadequate. - Farming Systems: Technology is basically traditional with minor improvement. Incentive to farmers is expanded production area, not increased production. Livestock, fisheries, & tree crop components still minimal. Improved seeds very limited. - Funding: Distribution system still hampered by untimely funding. GOI contribution & prefinance frequently too late to provide inputs for first planting season. 1985/86 is on schedule.	1. Problem areas (source of erosion and potential erosion, run-off, thin soils plus population density & land holding patterns) must be identified and model farming/expansion must be designed for these areas jointly by WMDC/Kabupatens. 2. Terrace conservation needs more grasses. Nurseries could be contracted to coop/private sector through project host country contract initially or to individual farmers in area. Problematic soils need more attention to waterways & drop structure. 3. Farming Systems: Livestock, fisheries, & tree crops must be added to the expansion package if not available through credit. 4. Funding has improved and should be on time for 85/86. Reimbursements need special attention from BANCDA especially to assure that reimbursement for IFY 85/86 expansion can be made by TBD and distribution of inputs made before PACD.

Nurseries Sub-Component According to the Loan Agreement

Nurseries should be located in each sub-basin in a strategic site with easy access to roads for delivery of plant material. Preferably three nurseries will be private farmer operated but government nurseries will be established if necessary. The grass will be given free to those farmers in the Model Farms or in areas where upland package expansion is taking place.

Trees such as clove, Parkia sp., Citrus spp., Albizzia falcata, Leucaena spp., Glicicidia sp., and coffee should be provided at cost to those farmers participating in the programs.

Each nursery will have two PLP's assigned to it for management and operations.

Project Sub-Component: Nurseries
Implementing Agency: P3RPDAS
(Rp.000; US$ 1.00 = Rp. 1,000)

Performance Against Physical and Funding Targets

INDONESIAN FISCAL YEAR	LOAN FUNDS ORIGINALLY BUDGETED	TOTAL ACTUAL GOI EXPENDITURE	IMPLEMENTATION TO DATE	USAID COMMITMENT	REIMBURSEMENT TO DATE	UNUSED LOAN FUNDS
1981/82	($576,000 allocated through life-of-project for 5 permanent nurseries)	)	1981/82 through 1983/84 P3RPDAS provided 5 Regreening-funded permanent nurseries for Citanduy II. Other Regreening nurseries sometimes supplied Model Farms.	0	0	576,000
1982/83		) 97,557		0	0	576,000
1983/84		)		0	0	576,000
1984/85		-0- AID pre-financed	100% 5 ea	32,538 (PIL 37)	22,915	543,462
(Cumulative through 84/85)		(130,145)		(32,538)	(22,915)	(543,462)
1985/86		52,151	0% 5 ea	52,072 (PIL 37)	0	491,390
TOTAL	576,000	182,296		84,610		491,390

Explanation/Analysis:

1. Implementation: Through 83/84, greening funded nurseries were used; not reimburseable. For 84/85 and 85/86, 5 USAID funded permanent nurseries are being implemented.
2. Expenditures: Far below loan agreement targets.
3. Commitments/Reimbursement: 100% for 84/85 and 85/86 anticipated.
4. Loan Use: 15% of total allocation, Rp. 84,610,000.
5. Remedial Steps:
   1. Assign GOI counterpart budget for nurseries (Inpres; APBN, etc.).
   2. Propose new nurseries to supply 2,500 ha of 85/86 Expansion Areas, or reallocate Rp. 491,390,000 to other activity.

Nurseries
Assessment

ACTIVITY	PROGRESS TO DATE	ISSUES & PROBLEMS	CONCLUSIONS/RECOMMENDATIONS
	Through 83/84 permanent Greening nurseries 2 ha each have produced 6,107,000 cuttings. At 17,000 cuttings per ha this was sufficient for 350 ha. This was applied to 180 ha of model farms, and the remaining allotment of 170 ha was distributed to over 1,157 ha of expansion at greatly reduced rates. Beginning in 84/85, non-greening AID-funded nurseries began operation directly under WMDC. There are 5 nurseries, totalling 4,7 ha producing grasses and trees at Greening standards. Nurseries will be continued and expanded to 5,9 ha in 85/86.	Production is not keeping pace with expansion. Transportation of grasses is limited. Water is not available in dry season resulting in reduced production and untimely planting in expansion areas. Both HYV grasses and seedlings produced were 40% below the number needed for expansion program areas. Lack of funds for transportation of grasses and seedlings made nurseries much less effective. To cope with this situation, local governments put aside some GOI Local Initiative Project funds for additional nurseries in the first and second year. This is continuing in FY 84/85. Tree seedlings of certain varieties such as calliandra and lamtoro gung were not very well accepted by farmers due to the availability of other tree varieties that suit farmers more.	84/85 expansion of 1602 ha will require 28,000,000 grass cuttings. With 25% shrinkage (loss), 35,000,000 cuttings must be produced. At 1,000,000 cuttings produced per hectare per year, 35 ha of nursery are required. For 85/86 53 ha will be required. Locations must be strategic, with good access and water. Transportation must be made available. Project nurseries have nowhere near the capacity to supply FY 84/85 and 85/86 expansion. Project host-country contracts could be let to supplement WMDC existing nurseries. If producers were local, capacity to produce would remain in Bosia after the project. Without this action, kabupatens will budget for grass purchase and delivery through expansion budget, but procurement will be difficult for such quantities. Consideration should also be given, in any future HF or expansion activities, to: 1. Nursery construction prior to initiation of HF or expansion, not simultaneously; 2. Inclusion of nursery funds in same budget as that for HF or expansion a) to avoid synchronization problems of separate funding channels and separate implementation responsibility, b) to encourage nurseries at the site where it is needed including perhaps, nurseries run by farmers themselves on own lands (water still the constraint).

Access Roads Sub-Component According to the Loan Agreement

Access to each model farm site will be provided as needed by construction of an all-weather stone surfaced road. Access roads will also be extended to other areas where the upland package program is underway, within limitations of availability of funds.

The access roads will generally follow existing trails and will consist of widening, stone surfacing and erosion control measures, using construction standards already established for the Padat Karya program.

Local labor will be used. Experience at the Panawangan Pilot Watershed indicates that in many areas villagers will be willing to contribute labor if materials and guidance are provided. Such areas should receive preference particularly in extension of the access roads to upland technology package expansion areas. However, payments for labor may be made when necessary, using the rates in effect for the Padat Karya program.

Constructions of access roads will be administered by local government.

Project Sub-Component: Access Road
Implementing Agency: BAPPEDA
(Rp.000; US$ 1.00 = Rp. 1,000)

Performance Against Physical and Funding Targets

INDONESIAN FISCAL YEAR	LOAN FUNDS ORIGINALLY BUDGETED		TOTAL ACTUAL GOI BUDGET	IMPLEMENTATION TO DATE		USAID COMMITMENT		DISBURSEMENT TO-DATE	EMISES LOAN FUNDS
1981/82	16 km	36,600	0			0		0	36,600
1982/83	25 km	61,600	0			0		0	61,600
1983/84	56 km	157,700	198,100	100%	11.4 km	81,370	(PIL 45)	0	76,330
1984/85	94 km	297,800	416,330	20%	20.8 km	72,548	(PIL 63)	0	225,252
(Cumulative through 84/85)	191 km	(553,700)	(613,984)	(35%	32.2 km)	(153,918)		(0)	(399,782)
1985/86	136 km	478,700	566,584(Est.)	0%	29.2 km(Est.)	283,292 (Est.)		-	195,408
TOTAL	327 km	1,032,500	1,180,568		61.4 km	437,210		0	595,290

Explanation/Analysis:

1. Implementation lags far behind Loan Agreement targets; through 84/85 model farms, 14 still do not have access roads or rehabilitation totalling 54.6 km, in addition to the 61.4 km already implemented or planned; 18 85/86 model farms will also "need" 18 access roads.
2. USAID commitments are on target (50%) and up-to-date as per proposal submissions. All 84/85 proposals have been submitted informally to USAID but are awaiting clarification of technical issues and formal submission from BANGDA.
3. Reimbursement is lagging: 83/84 Access Road reimbursement requests should be initiated by BANGDA immediately.
4. Projected loan use is Rp. 574,297 or 56%; total projected km is 61.4 km or 19% of 327 km target.
5. Remedial steps:
   a. Process reimbursement request for 83/84 access roads Rp. 82,589,000.
   b. Process 84/85 pre-financing and begin 84/85 access road construction.
   c. Propose revision of USAID reimbursement rate from 50% to 75%.
   d. Re-explain program to Bupatis, Biro Pembangunan.

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Access Road
Assessment

Anticipated Outputs	Progress to Date	Issues & Problems	Recommendations
Provision of all weather stone surfaced access roads complete with erosion control measures to each Model Farm (and if possible to the Upland Technology Package Expansion Program areas), using Padat Karya system. Target: 327 Kilometers.	29.0 km of all weather road has been constructed to 8 model farms & expansion areas by local government without AID assistance. 11.4 km have been constructed with loan funds totalling (committed and earmarked) Rp.98,799,000. Programmed for 84/85 & 85/86 is another 50 km to 7 model farms/expansion areas. Unprogrammed but called for by the Loan Agreement is an additional 126.6 km to 32 model farms/expansion areas.	Most model farms/expansion areas already have some form of access roads, but often require rehabilitation & drainage. Depending on location this rehabilitation requires different standards based on population density and traffic volume as well as terrain. New access roads don't appear to be a necessary condition for success of a MF. But a new access road or road rehabilitation may still be a good investment. Erosion-proof access roads to expansion areas, however, are beyond scope of project since expansion is scattered, often small plots. Deeper issue is whether roads should lead location of MF's or vice versa; true "critical" erosion areas often have no access at all. Difficulty in providing counterpart and pre-finance budget from (limited) Inpres Road-building funds is due to purposes, criteria, & standards of local government road programs which differ from those of Access Roads. Utilization of local government road-building funds would be facilitated by increased participation of local government in Model Farm and Expansion area placement i.e., site priorities would be more consistent. Implementation has been slow due to (a) incomplete information and poor communication between central government and local government in terms of providing local funding as counterpart budget, (b) untimely pre-financing funding at field level, (c) kabupaten prioritization of road building programs to link population centers and facilitate existing trade, commercial and marketing routes, not necessarily in relatively sparsely populated uplands. Loan Agreement per unit allocation of funds was under-budgeted (Rp.2,200,000/km), including materials but no labor. This proved unrealistic and Rp.12,000,000/km has been used. This lowers the attainable project target from 327 km to 90 km of which 61.4 km is projected to be achieved at PACD, while an additional 126 km is potentially required.	Conduct joint field surveys by PJMPDAS, BAPPEDA, PUK to determine which farms need access roads. Provide clear directions (petunjuk pelaksanaan) from central government to local government concerning funding channels, pre-financing, reporting, overhead costs, contracting for the activity. Various road building programs should be utilized including Pemanfaatan Jalan, Inpres Bt. II, Padat Karya. Limited funds available from kabupaten may necessitate increasing USAID contribution to 75% or more.

Credit Sub-Component According to the Loan Agreement

During the first year, credit requirements and possible delivery systems will be studied and an initial credit program established to be operational by the second year. This credit program will be designed to enable upland farmers to purchase the upland technology package inputs needed for their participation in the upland package expansion program.

Experience with this credit program during the second and third years will provide the basis for a major credit program proposal to be included in the long-term upper watershed "Master Plan" to be prepared by the end of the third year

Project Sub-Component: Credit
Implementing Agency: BAPPEDA
(Rp.000; US$ 1.00 = Rp. 1,000)

Performance Against Physical and Funding Targets

INDONESIAN FISCAL YEAR	LOAN FUNDS ORIGINALLY BUDGETED	TOTAL ACTUAL GOI BUDGET	IMPLEMENTATION TO DATE	USAID COMMITMENT	REIMBURSEMENT TO DATE	UNUSED LOAN FUNDS
1981/82	18,600	0	0	0	0	18,600
1982/83	130,200	178,792	100%	110,000 (PIL 28,39)	0	20,200
1983/84	443,000	464,922	80%	106,766 (PIL 62)	0	336,234
1984/85	797,200	619,000	50%	0	0	797,200
(Cumulative through 84/85)	(1,389,000)	(1,262,714)	(20%)	(216,766)	0	(1,172,234)
1985/86	1,064,500	595,405	-	297,703 (Est.)	-	766,797
TOTAL	2,454,500	1,858,115		514,469 (Est.)*	-	1,940,031

Explanation/Analysis:

1. Implementation is far behind schedule but must follow model farm expansion implementation rates and therefore is difficult to accelerate without greatly expanding credit targets or objectives.
2. USAID commitments are very late and require immediate resolution via BANGDA and BPD Jabar and Jateng in terms of an acceptable, comprehensive credit plan and lending procedures (see PIL # 28, 39).
3. Reimbursement: 82/83 W. Java Credit should be processed immediately for reimbursement from USAID Rp. 108,150,000 (reports required from BPD and BKPD).
4.* Projected loan use: with no further delay in USAID approvals estimate maximum Rp. 979,814,000 of loan funds will be used, or 40%, but probably considerably less.
5. Remedial steps:
   a. Process 82/83 W. Java reimbursement.
   b. Complete approval process for West and Central Java credit programs (PIL's).
   c. Re-allocate excess credit funds, or extend project life.

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Credit
Assessment

Activity	Progress to Date	Issues & Problems	Recommendations
Establishment of a viable ag-credit and delivery system in the upland MF and Expansion area. Experience gained to be used as basis for major credit program proposal included in Basin Master Plan.	West Java: Rp.150,000,000 of GOI and AID contribution lent (since April 1984) to 100 farmer groups representing over 1,000 persons, & to 15 individuals mostly in agriculture production but some for ag. trade and industry at varying terms. Central Java has lent GOI, not AID, funds of Rp.18,000,000 to 429 borrowers (Rp.12,600,000 group credit, Rp.5,400,000 individual credit) for agriculture production and trade since October, 1984. PIL to commit USAID funds for Central Java lending is in circulation. Preliminary indications are that loans are moving quickly and that first repayments are on schedule.	Protracted negotiations within GOI, within AID, between GOI and AID over the proper form for an upland credit program. As a result, credit has only just begun to flow. There are thus, as yet, no lessons learned from the performance of the program that would be applicable to further activity in Citanduy or to similar upland efforts in other basins. West and Central Java have initiated and proposed, respectively, very different credit programs. West Java's is supervised, with interest rates varying according to borrower's intended use of funds, and with long-term (18 month) repayment. Central Java's is unsupervised, with interest varying according to repayment period as well as according to use of funds, and maximum repayment period of six months.	Continue activity and monitor closely to answer (via USESE) following type of questions: a. do farmers borrow for livestock; b. given Citanduy II's success in expanding new upland technology, is credit necessary? If credit is necessary, must it be supervised or not? c. if upland credit is not necessary for expansion, is it still desirable i.e. does it still provide an acceptable return? (For this sort of empirical study, having two quite different credit programs—Central and West Java—is an advantage.)

Research Sub-Component According to the Loan Agreement

A comprehensive applied research program will be carried out by the Agency for Agriculture Research and Development (AARD). Five field units, one in Tasikmalaya, two in Ciamis and two in Cilacap will provide comprehensive coverage of the various weather, soils, plant culture and cropping systems found throughout the basin.

The field research units will provide and upgrade the "Agriculture Technical Package" for the farmers and extension personnel. Research will be conducted in the fields of agronomy, animal husbandry, agro-forestry, silvapasture, fresh water fisheries, soil erosion and land capability. Some activities such as fresh water fisheries will require very little input since existing facilities in Tasikmalaya have proven to be very successful. In the field of animal husbandry, research is needed in storage of fodder (silos, etc.) and livestock management. Silvapasture and agronomic activities will be the major components of the field research units. Soil erosion research will be carried out in cooperation with on-going programs.

The field research will be executed at Watershed Development Subcenters (WDS) which will also serve MOA nursery and extension personnel working in that subwatershed and adjacent areas.

Project Sub-Component: Upland Agricultural Research
Implementing Agency: AARD
(Rp.000; US$ 1.00 = Rp. 1,000)

Performance Against Physical and Funding Targets

INDONESIAN FISCAL YEAR	LOAN FUNDS ORIGINALLY BUDGETED*	TOTAL ACTUAL GOI BUDGET	IMPLEMENTATION TO DATE	USAID COMMITMENT*	REIMBURSEMENT TO DATE	UNUSED LOAN FUNDS
1981/82	(Life-of-project loan funds 182,400)	25,000	100%	0	0	182,400
1982/83		47,520	100%	0	0	182,400
1983/84		65,133	75%	52,430 (PIL 12,16)	15,051	129,970
1984/85		80,650	5%	96,607 (PIL 50,54)	21,949	85,793
(Cumulative through 84/85)		(218,303)	-	(149,037)	(37,000)	(33,363)
1985/86		56,874 (Est.)	-	69,500 (Est.)	-	- 25,749
TOTAL	182,400	473,022		218,537	37,000	- 36,137

Explanation/Analysis:

* (GOI budget includes research considered by GOI, but not AID, as Citanduy research; USAID funds via advances, activity not pre-financed by GOI.)
1. Implementation: GOI implementation has been above loan agreement targets.
2. Commitments: anticipated will exceed Loan Agreement targets.
3. Reimbursements: relative to commitments, are OK, utilizing direct reimbursement and advances.
4. Projected loan use: Rp. 208,149,000 or 114%.

Assessment
Research

Detailed of Expected Outputs	Progress to Date	Issues and Problems	Conclusions/Recommendations
Comprehensive coverage of the various weather, soil, plant systems throughout the basin.	A wide variety of production agronomy trials have been carried out across a range of environments estimated to include 60% of Basin upland conditions. Model Farms have generally adopted research recommendations. A superior variety of upland rice has been identified and is being distributed with eager acceptance by farmers. Fertilizer recommendation are being made with increased precision. Crop protection priorities have been established with some recommendations. Observation suggests that research recommendations are effecting increased diversification in cropping systems with greater emphasis upon upland rice and peanuts & less emphasis upon cassava. As a primarily production agronomy effort, research has had the following components: - seed testing: quite good but no follow-up seed multiplication to distribute to farmers; - soil research: fair; - crop protection: weak; - post harvest technology: weak.	Research needs long lead time before it can be applied; implementors of project research didn't arrive in Basin until 1982. Research manager has lacked authority to manage research program from the Basin; cumbersome approval process through AARD diverts attention from the research itself yet there are too few supporting trained and experienced staff to proceed independently of manager. Research has been primarily funded by AID advances: delays in approval and issuance of funds mean funding and hence research not synchronized with seasons. Emphasis on food crop production trials has not addressed whole farming system: - applied research is required on livestock, fisheries, agro-forestry or other alternatives to standard terraces including erosion monitoring; - socio-economic assessment of acceptability; - increased participation in research by extension service or farmers to provide feedback on acceptability and needs. Absence of seed multiplication facilities and program reduces impact of seed research tests. Much upland research has been or is being conducted both in Indonesia or abroad. Without an inventory and centralization of the results, duplication of effort is inevitable. Project research effort has not revolved around 5 Sub-Centers as Loan Agreement anticipated. Integration of research with other components may have been slowed as a result.	Encourage seed multiplication facilities/capability (Local Initiatives, separate proposals to AID) in tandem with research staff. Provide forum for SEKU and AARD Agro-Economic researchers to assess cropping system acceptability and needs and to discuss these with agronomic research staff. If project activity continues in the Basin past present PACD, and if UAC project includes a comprehensive farming systems research program covering agro-climatic conditions of Citanduy, do not continue research in Citanduy itself but provide for an ongoing link between UAC research and the Basin. In addition: 1. continue seed multiplication effort; 2. continue socio-economic assessement of Basin farming systems (both new and traditional) to feed back in to UAC effort (both terracing and agro-forestry); 3. fund the inventory and centralization of upland research results from both Indonesia and abroad.

Reforestation and Greening Sub-Component According to the Loan Agreement

The existing reforestation and greening program will be continued and improved at least through the end of Repelita III (year three of the project). The area of coverage included in Repelita III plans beginning with IFY 1981/82, 25,000 ha., is included in project data. All costs of the program will be GOI funded and supported by existing P3RPDAS staff.

The program's success has been variable. Despite treatment of 52,464 ha. of critical non-forest lands in the basin during Repelita II, the critical area actually increased from 24,524 ha. at the start of that period to 42,289 ha. at the end. These statistics indicate serious problems in defining critical areas, but also suggest much treated land quickly reverts to critical status.

Assessment
Reforestation and Greening

Details of Expected Outputs	Progress to Date	Issues & Problems	Recommendations
Rehabilitated and conserved non-forestry land: 8,904 ha.	a. Surpassed the goal i.e., 35% of 25,000 ha (8,750), two years after the project had been started. b. Popular appreciation of Regreening goals has increased; Regreening is, for example, now an extra curricular activity in Ciamis school system.	Citanduy II is perceived by many in the Ministry of Forestry as a testing ground for the national Regreening program. The extent to which Citanduy "lessons learned" have been or can be incorporated into Regreening deserves special attention.	Citanduy II should further exploit its potential to influence the Regreening program. Assistance should be provided to, at a minimum, compare costs & benefits of the project approach to those of Regreening.
Rehabilitated and conserved forestry land: 1,170 ha.	Information not immediately available.		

Erosion Control on Existing Roads Sub-Component According to the Loan Agreement

Existing roads and trails in the basin suffer considerable erosion damage and are a major source of sediment in the rivers and streams. It is usually short sections of such roads which have severe erosion problems and treatment of these sections wi erosion control measures will be financed under the project. Specific measures cannot be identified in advance of field surveys but funds provided estimated to be sufficient to treat a total of 78 km. of such erosion prone road segments.

It is expected that much of the labor will be contributed by the villagers served by the road. The program will be administered by local government to facilitate this village involvement.

Project Sub-Component: Erosion Control on Roads
Implementing Agency: BAPPEDA
(Rp.000; US$ 1.00 = Rp. 1,000)

Performance Against Physical and Funding Targets

INDONESIAN FISCAL YEAR	LOAN FUNDS ORIGINALLY BUDGETED		TOTAL ACTUAL GOI BUDGET	IMPLEMENTATION TO DATE		USAID COMMITMENT	REIMBURSEMENT TO DATE	UNUSED LOAN FUNDS
1981/82	3 km	6,800	0	0		0	0	6,800
1982/83	7.5 km	18,200	0	0		0	0	18,200
1983/84	15 km	41,600	0	0		0	0	41,600
1984/85	22.5 km	70,200	58,400	0%	20,3 km	27,176 PIL 63	0	43,024
(Cumulative through 84/85)	(48 km)	136,800	(58,400)	(0%	20,3 km)	(27,176)	0	(109,674)
1985/86	30 km	104,100	71,921(Est.)	(0%	25.0 km)	35,961 (Est.)	-	68,139
TOTAL	78 km	240,900	130,321			63,137	-	177,763

Explanation/Analysis:

1. Implementation: behind loan agreement targets (an anticipated 45,3 km/78,0 km).
2. Commitments: first commitment PIL (Cilacap 1984/85) in circulation; other current proposal (also Cilacap 84/85) requires formal GOI submission to USAID.
3. Reimbursement: no implementation completed.
4. Projected loan use: 65,161 or 27% of loan allocation.
5. Remedial steps:
   a. Re-explanation of this activity especially for Bupati, Biro Pembangunan Dt. I & II, P.U.K. and Bina Marga in technical and budgetary procedures.
   b. Increase USAID reimbursement percentage to 75% due to limited Inpres Dt. II funds, especially outside of Cilacap.
   c. Alternative use of Inpres Penunjangan or Inpres Dt. I funds as counterpart budget.
   d. Re-allocate to other activity.

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Assessment
Erosion Control on Existing Roads

Detail of Expected Outputs	Progress to Date	Issues & Problems	Recommendations
78 km of segments of road to be treated with erosion-proofing (undefined purposely).	No activity to date. 4 proposals about to be approved by USAID for Kab. Cilacap, C. Java for erosion-proofing on 20.3 km of road in the area of three established model farms. Rp.54,400,000 budgeted by GOI for this purpose. Implementation: Mar. 85 - Sept. 85. Expect an additional 25 km of proposal in 85/86 (Cilacap also).	(similar to these of Access Roads) a. Incomplete information and poor communication between central and local government in terms of providing counterpart budget, which must come from Inpres Dt.II road maintenance program. b. Late pre-finance funding at field level (current hold-up on 84/85 implementation). c. Allocation of funds is very small: divided up by BANGDA between provinces (C.Java 40%, W. Java 60%) and re-divided by provinces between 5 kabupatens. Thus genetes little interest even though the type of activity remains of interest to kabupatens (PUK).	Activity is potentially popular with local government but must be adjusted to be of value. Options include: a. combining with access road activity for a larger value package with more flexible purposes; b. increasing allocation per kabupaten to a level more attractive in terms of their budgeting, planning, and management cost; c. targeting activity and allocation to specific areas (i.e., Ciamis, Cilacap) for same reasons as (b). d. discontinue activity. In addition, clear, concise directions and consultations are needed between central and local government concerning funding channels, pre-financing, contracting, reporting, overhead, etc.

Other Conservation Measures Sub-Component According to the Loan Agreement

Further survey information and study will be needed to identify other erosion control measures to be undertaken. However, it is likely that such measures including small check dams, gully stabilization and stream bank protection will be needed in a comprehensive erosion control program. The amount budgeted will permit application of a number of these measures during the project period to allow for evaluation of effectiveness as well as beginning treatment of specific problems.

Project Sub-Component: Other Conservation Measures
Implementing Agency: P3RPDAS/Public Works
(Rp.000; US$ 1.00 = Rp. 1,000)

Performance Against Physical and Funding Targets

INDONESIAN FISCAL YEAR	LOAN FUNDS ORIGINALLY BUDGETED	TOTAL ACTUAL GOI BUDGET	IMPLEMENTATION TO DATE	USAID COMMITMENT	REIMBURSEMENT TO DATE	UNUSED LOAN FUNDS
1981/82	69,800	0		0	0	69,800
1982/83	69,800	0		0	0	69,800
1983/84	69,800	27,417	80% (Gully plugs)	0	0	69,800
1984/85	69,800	48,000	0 (Hydram, dam)	0	0	29,800
(Cumulative through 84/85)	(279,200)	(75,417)	-	0	0	(279,200)
1985/86	69,800	30,000	0	0	0	69,800
TOTAL	349,000	105,417		0	0	349,000

Explanation/Analysis:

1. Implementation: very minimal activity outside of regular Penghijauan Program (which is 100% GOI financed).
2. Commitment: Nihil - proposals not submitted to USAID. One 1FY 84/85 proposal is anticipated.
3. Reimbursement: Nihil
4. Loan Use: Nihil
5. Remedial Steps: assignment of GOI budget other than Inpres Penghijauan as counterpart fund (APBN, Inpres Dt. I, Inpres Dt.II or other). Re-explain activity to potential implementing bodies: P3RPDAS, PPSC, Sekai Irigasi, PUK, etc.

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Other Conservation Measures Assessment

Detail of Anticipated Outputs	Progress to Date	Issues & Problems	Recommendations
Anticipated in Loan Agreement: 1. Small check dams. 2. Gully stabilization. 3. Stream bank protection. 4. Other as needed.	Gully plugs are being built in various model farm and expansion areas, Rp 27,417,000 - from 83/84 budget. GOI funds available for 84/85 activity (hydram, check dam) Rp 8,000,000 (may request Rp 40,000,000 from USAID). Programmed for 85/86 activities Rp 30,000,000. Gully stabilization is highly effective to stop gully erosion particularly in high sloping areas.	No plans proposed to USAID to date, from either Forestry or Public Works. Undefined nature of activity has prevented initiative, as it makes identifying GOI funding difficult. Penghijauan program has more than adequate funds (at least for checkdams) and there is less bureaucracy to obtain these than AID funds. Small check dams do not treat the cause or source, but treat the effect, of erosion. As far as conservation is concerned, the effectiveness is low.	Formal identification of required types of activity is needed and should be identified as an outcome of watershed development planning (aerial photos). Outlines of specific activities can be followed by identification of relevant GOI funding channel. 50% GOI contribution may have to be reduced as no existing funding channel is relevant (exception Impres Dt. II). Activity should be integrated with MF's, expansion, or access roads, or discontinued. For stream bank protection, it should be determined whether UBSC or Public Works should be given responsibility.

Watershed Development Planning Component: General Description According to the Loan Agreement

In addition to the research and experience gained in the spread of the upland technology package through the model farms, credit program and other project activity, planning for long-term development in the Citanduy Basin will require extensive survey and data collection efforts. These will begin the first year of the project so that an Upper Watershed Master Plan can be completed by the end of the third year and incorporated into an overall update of the Master Plan for Citanduy Basin Development.

Survey and data collection activities will include aerial photo mapping, soil capability surveys, socio-economic surveys, and collection of hydrologic and sedimentation data (both on a micro scale as part of the research activity and a macro-basin wide-scale for total program planning and evaluation).

Project Component: Watershed Development Planning
Implementing Agency: PJRPDAS, MOF, Puslitbang Pertanian, MOA; DOB, MPU
(Rp.000; US$ 1.00 = Rp. 1,000)

Performance Against Physical and Funding Targets

ACTIVITY	ORIGINALLY BUDGETED LOAN FUNDS	COMMITTED TO DATE	EXPENDITURE TO DATE	REIMBURSED TO DATE	UNLIQUIDATED BALANCE OF COMMITMENT	UNCOMMITTED BALANCE OF LOAN
Agro-Economic Research	126,000	121,000	57,000	30,000	64,000	5,000
Aerial-photo	660,000	455,000	455,000	455,000	0	205,000
Scientific Equipment	114,000	114,000	114,000	99,000	0	0
Hydrological Equipment	110,000	98,000	81,000	14,000	17,000	12,000
Watershed Plan Preparation	64,000	0	0	0	0	64,000
WMDC Office Equipment & SubCentres	152,000	44,000	44,000	44,000	0	108,000
TOTAL	1,226,000	832,000	751,000	642,000	81,000	394,000

Explanation/Analysis:

1. Agro-Economic Research: Work is proceeding but slowly; advances and their liquidation should be speeded up.
2. Aerial Photo: Rp. 205,000,000 can be reallocated to other watershed development planning activities, less potential funds to reproduce existing photo sets for field use.
3. Scientific Equipment: Funds exhausted.
4. Hydrological Equipment: Procurement in process. Rp.12,000,000 can be reallocated to other watershed development planning activities.
5. Watershed Plan Preparation: No activity: to be used for upper watershed development plan formulation and Master Plan.
6. WMDC: Potential equipment needs for upper watershed development plan and Master Plan include planning space, micro-computer, typewriters, copy facilities, communication facilities.

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Assessment
Watershed Development Planning

Expected Output	Progress to Date	Issues & Problems	Recommendations
1. Aerial Photo maps. 2. Soil capability survey. 3. Socio-economic surveys (Agro-Economic Research) 4.a. Micro scale hydrologic and sedimentation data as part of the research activities. b. Macro-basin widescale hydrologic and sedimentation data for total program planning and evaluation.	Aerial photography has been completed for 160,000 ha. Interpretation continuing, including orthophoto mapping by P3HPDAS. Soil surveys and suggested land use has been carried out (Padjadjaran Univ. Bandung) on 48,600 ha, in semi-detail. Socio-Economic surveys are being carried out by AARD to compensate for late start-up of USESE. Micro-scale hydrologic and sedimentation data is being collected by P3HPDAS. Macro-hydrologic sedimentation data collection continuing as part of water balance study ECI-PROCIT Banjar.	Activity in general is 2 years behind schedule and thus less than complete for purpose of Master Plan. Activity is being carried out by four separate agencies; although coordination is not significant problem, centralization of results for use in the basin is problematic: information and data is scattered. Aerial photo interpretation and mapping hampered by lack of staff & facilities. Soil surveys cover a limited area and are only semi-detailed. The end purpose of survey should determine the level of detail required. Either this link is not fully appreciated or the end purpose is not carefully defined.	Results of activities (data) must be centralized at WHDC and/or Procit Banjar. WHDC requires more planning staff and facilities to store, process and utilize these results. Results must begin to be utilized in planning field activities (RP's, expansion, access roads, etc.) as well as for long-term upper-watershed and basin regional plans. This in turn will require intensification of local government participation in the WHDC and greater exposure of local government to the techniques/purposes of the activity.
The availability of a comprehensive and multisectoral upper watershed Master Plan.	In design phase now by WHDC. Will be ready 4/86, 2 years late.	Master Plan preparation now underway, scheduled completion set for 12/85. WHDC contribution to upper watershed component of overall plan not expected until 4 months later. Means to assure involvement of local government in Plan preparation and applicability of Plan to local government administrators yet to be ascertained. WHDC (P3HPDAS) desire to contract out upper watershed plan data collection will result in no institutional learning either at WHDC or with local government. However, heavy IFY 1985/86 implementation schedule for WHDC suggests contracting out may be unavoidable.	Proceed with Master Plan as presently envisaged between project consultants and local government. Assure a technical and conceptual "fit" between Master Plan and upper watershed plan so that the latter is meaningful and can be incorporated into the former. Make any AID funding support of upper watershed data collection and analysis contingent on the participation of local government in the process.

Extension and Training Component: General Description According to the Loan Agreement

A central feature of the Citanduy Basin upper watershed development project will be the transfer of improved upland technology to the many small farm operators who depend on the hillsides for their livelihood. Consequently, a strong upland extension effort will be essential for project success. While increasing food production has received major attention for many years, the focus of that attention on rice only recently has begun to be broadened to include upland crops. As a result, a shortage of personnel to carry out the upland extension work remains, and a major training effort is needed.

The training and extension component will be undertaken in the context of major national programs to expand capability in these areas. At the same time, the importance of this activity to the basin development project requires its full integration in the project implementation plan, while, conversely, the focus on upland development has implications for nationwide program requirements.

Upland Extension Sub-Component According to the Loan Agreement

Extension activity in the upper watershed development project will be consistent with the national extension policy and programs, while accommodating the need for intensified effort to introduce an improved technology package. The approach will concentrate staff first in target areas with subsequent reassignment to provide permanent extension service throughout the basin.

National extension policy and the extension program, supported with assistance from the World Bank (BAEP II), aims at a target ratio of one extension worker for each 1,600 farm families on Java. That policy and program also provides for a unified extension service and multidisciplinary extension field workers. Acceleration will be necessary in order to introduce the entire package of technology, as a package, rather than adhering to the BAEP II schedule which contemplates no more than one new subsector per district per year.

The upper watershed project provides for assignment of a number of polyvalent agriculture extension workers to the Citanduy basin's upland cropping areas. These extension workers will be highly concentrated at first. Extension field workers will be assigned to develop each upland model farm during its first year and to provide intensive guidance to the farmers in the vicinity. In subsequent years, transfers from this pool of by then experienced extension services in the areas around the model farms, where they will promote the expansion of the upland package of technology.

To the extent applicable, funding for equipping these upland extension personnel and their compensation and operating costs will come from the national extension program. As an essential integrated component of the project upper watershed program, the project budget includes these costs as a GOI budget item, with supplemental funding if needed, from the AID loan.

Upland Training Sub-component [discussed in a separate section (Training) of the Assessment]

Assessment
Extension

EXPECTED OUTPUT	PROGRESS TO DATE	PROBLEMS AND ISSUES	RECOMMENDATIONS
The availability of capable polyvalent upland agriculture extension workers.	a. Achieved target in time frame: 140 polyvalent extension workers now deployed in 32 MFs and 5,000 ha of expansion (subsidized and spontaneous). b. Many polyvalent PPLs are now permanently assigned to their UKPP. c. Generally satisfactory performance. d. Funding has been all GOI, not AID, except for extension worker training (discussed under Training Section).	a. The purpose of a Model Farm is to extend its technology but the formal status of UPP with respect to the development of MF's and expansion areas has not been fully clarified and extensionists have played only a minor role in the design and placement of MF's and expansion areas. b. Continuing dominance of food crops extension within the extension service serves the expansion of standard terrace technology fairly well but may slow down expansion of other models e.g. variants of agroforestry. c. Extension workers' effectiveness is diminished by by: 1. Weak link between research and extension. 2. Insufficient extension materials. 3. Low mobility due to lack of assigned transportation, i.e., bicycle or motorcycle. UEB not enough. Loan Agreement called for GOI to provide 1 motorcycle per MF (for PPM). There are now 32 MF's but only 12 motorcycles in the field. 4. Lack of training in community development and leadership. 5. Chronic delays in delivery of inputs and persistent shortage of improved seed.	a. Role of UPP in Model Farm and expansion planning should be clarified and formalized. b. Technical Assistance is no longer needed. But attention should be paid to: 1. transportation for extensionist; 2. more extension materials, especially visual aids; 3. increased exposure of extensionists to research and increased feedback from former into latter; 4. solutions to quality inputs problem; 5. more attention to women (they maintain the crop after planting).

Watershed Management Development Center Component: General Description According to the Loan Agreement

The present Citanduy Project headquaters and housing space is already fully occupied and additional construction is underway to meet current needs. There is no likelihood that surplus space will become available in the near future. Therefore new construction will be required for the upper watershed development team offices and housing.

The upper watershed project component is a transition phase only and a long-term development effort (20 years or more) must be anticipated. At the same time, the experience in upland development in the Citanduy Basin should become a resource for similar development in other areas. The headquarters facilities are therefore proposed as a Watershed Development Center, suitable for both immediate project and long-term needs.

Watershed Development Subcenters

Project field activities will be located throughout the basin and distances involved prevent stationing all personnel at a single headquarters. Five subcenters will take into account hydrologic divisions, differences in major soil characteristics and local administrative jurisdictions. Each subcenter will serve as a support base for research, nursery and model farm activity in its area, as well as for field observation activity in connection with the training and extension program.

Planned input requirement for Center and Sub-Center facilities:
AID $344,000 equivalent Rp. 215,000,000
GOI $822,000 equivalent Rp. 513,812,500

WHDC Staff as Planned in the Loan Agreement Compared (at right) to Staff in Place as of 12/12/84

A multidisciplinary team at the project level will constitute the watershed project office. This team will be headquartered in the basin at Ciamis and will consist of the following positions at headquarters:

Professional Staff	Home Agency	Number Yr.1	Yr.2	Yr.5		In Place as of 12/12/84	
Agric. Project Leader	MOA	1	1	1	)	MOF	1
Watershed Planner	D.G. Forestry (P3DAS)	1	1	1	)		
Conservation Engr.	"	2	2	2		MOF	1
Survey/Mapping Tech.	"	3	3	3		MOF	3
Nurseries Superv.	"	1	1	1		-	-
Training Coordinator	AAETE	1	1	1	)	BPLPP	1
Extension Program Spec.	AAETE	1	1	1	)		
Agronomist, Upland Crops	D.G. Food Crops	1	1	1		AARD	1
Small Ruminants Spec.	D.G. Livestock Services	1	1	1		-	-
Fisheries Spec.	D.G. Fisheries	1	1	1		-	-
Estate Crops Spec.	D.G. Estate Crops	1	1	1		-	-
Forestry Spec.	D.G. Forestry	1	1	1		-	-
Hydrology Engr.	D.G. Forestry (P3DAS)	1	1	1		MOF	1
		16	16	16		Total	8
Administrative/Support Staff							
Administrative Assistant		1	1	1		Yes	
Training Assistant		1	1	1		Yes	
Finance Officer		1	1	1		Yes	
Secretary/Translator		2	2	1		Yes	
Secretary, bilingual		3	3	1		Yes	
Secretary/Clerk		6	8	6		Yes	
Messenger/Porter		4	4	4		Yes	
Driver		9	9	7		Yes	
TOTAL HEADQUARTERS		43	45	38		Sufficient	

While not assigned as headquarters staff, research personnel from AARD will also be provided space at the headquarters.

In addition, the team will include field-staff needed to carry out project activities. Extension field-staff will gradually be dispersed to their areas of permanent responsibility, beginning in the second year, and be attached to the district agriculture services. Other project field staff, as well as some extension personnel, will be located at five subcenters located in representative areas of the basin. Field-staff requirements are as follows:

Professional Staff	Home Agency	Number Yr.1	Yr.2	Yr.5	In Place as of 12/12/84
Research Assistant	AARD	10	10	10	3
Nursery Operator	P3DAS	10	10	10	5
Polyvalent PPM	AAETE	6	10	25	30
Polyvalent PPL	AAETE	30	56	150	150
PLP	P3DAS	6	10	30	Yes
PPS Upland Crops	D.G. F.C.	-	-	3	Yes
PPS Small Ruminants	D.G. A.H.	-	-	3	No
PPS Fisheries	D.G. Fish.	-	-	3	No
PPS Estate Crops	D.G. E.C.	-	-	3	No
Conservation Specialist (1r.)	P3DAS	3	3	3	Yes

With exception of those P3DAS positions which can be staffed by personnel already assigned to the Citanduy Watershed Execution Unit, all the project staff positions are additional to existing local services and project staff in the basin. Not counted as project staff are approximately 150 Village Conservation Technicians, recruited from among participating farmers, who will receive special training in conservation and the upland production package. Of these, fifty will be employed part time to assist with operation of the model farms.

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Assessment
Watershed Management Development Center and Sub-Centers

ACTIVITIES	PROGRESS-TO-DATE	ISSUES AND PROBLEMS	CONCLUSIONS & RECOMMENDATIONS
The availability of a multidisciplinary team for upper watershed development planning, implementation, monitoring, and evaluation. The establishment of coordination, cooperation, and teamwork between project & local government including their special and regular technical staff involved in the project planning, implementation, monitoring, and evaluation.	Facilities have all been constructed with GOI funds. P3RPDAS at the WMDC has been assigned the task of leading the multidisciplinary project in the design and implementation of the upper watershed element. Additional professional staff from AARD, BPLPP, Food Crops, have been added to the core MOF personnel including MOF staff with skills in watershed management, conservation, forestry, hydrology, and mapping. (see table preceding page). This office manages food crop research, model farm planning and implementation, expansion mapping & monitoring, nurseries, Regreening, extension and extension training. Some watershed development planning (aerial photo mapping, soil capability, macro-hydrologic and sedimentation research) is also carried out and is to be integrated into the upper watershed master plan and the Basin Master Plan. Five Subcenters are in operation and working in cooperation with the BPP's (rural extension centers). Each model farm has a team of 1 PFPM and 5 PPL's that are coordinated by the PPM programmer at the BPP. The activities of the BPP's concerning the upland program for the Citanduy II project are coordinated by the chief of the subcenter. There is no consensus on the extent to which Sub-Centers have been effective in coordinating field activities.	Although professional staffing has been increased, P3RPDAS/WMDC is short of livestock, fisheries, estate crop, nursery personnel as well as mapping technicians and research assistants. This is reflected in the implementation bias of the project. In addition, technical input into local government activities (i.e., expansion, credit, access roads, local initiatives) is limited due to limited staff and organizational/institutional coordination problems with local government. Conversely, local government input into WMDC planning has been limited. Sub-Centers do not have the variety of extension agents anticipated, nor have they served as centers of research.	See District Upland Program Administration section on following page.

District Upland Program Administration Component: General Description According to the Loan Agreement

Local government will take on major responsibilities in connection with the upper watershed project and assistance will be provided to strengthen district government capability in managing soil and water resources.

Each district will appoint one full time Soil and Water Resources Coordinator to serve as senior staff representative of the Bupati for upper watershed project implementation. In addition to overseeing the project activities administered by the local government and implemented by the appropriate local technical services -- e.g. upland package expansion credit, access roads, and erosion control on existing district and village roads -- the Soil and Water Resources Coordinator will advise the Bupati and BAPPEDA II and provide liaison with project sectoral agency personnel on the upper watershed program.

District Upland Program Administration
Assessment

ACTIVITIES	PROGRESS-TO-DATE	ISSUES AND PROBLEMS	CONCLUSIONS & RECOMMENDATIONS
AID loan allocation was for vehicles to facilitate effectiveness of 4 soil and water coordinators.	The Kabupaten BAPPEDA's have taken on the responsibility as an office for the coordinating, liaison, administration, management, and monitoring of upper watershed activities originally designated to full-time, individual soil and water conservation coordinators. Vehicles have been provided to 4 kabupatens by AID. Administrative and overhead budgets are supplied by GOI (Inpres Dt.I).	Loan Agreement places initiative for coordination with kabupaten since it is a permanent institution while the WMDC is a project office. Nonetheless, the WMDC is designated lead (technical) project agency & much technical initiative remains with it. BAPPEDA has proved relatively effective in administering local government activities, i.e, expansion, credit, access roads & local initiatives, & coordinating the various dinas' who implement the activities. In some cases, they have integrated on-going non-Citanduy activities into Citanduy activities, e.g. non-project access roads, vanilla production, fisheries. However, their effectiveness is only is following a trail set by the upper watershed ag. tech. package: the model farm, its site selection, technical planning & budgeting predetermines much of the ag. tech. package activities & leaves relatively little discretionary scope to the implementors of follow-on components. For other components, roles are almost unrelated: nurseries is a key component of expansion but BAPPEDA's role is minimal. Similarly, WMDC technical role in expansion, credit, access roads and local initiatives is minimal. The overall upper watershed must be jointly planned & managed by WMDC & local government, but the institutional differences of status & authority inhibit this.	Full-time individual coordinators was unrealistic without AID funding to support administrative costs. BAPPEDA II is a viable coordinator. However, it cannot cannot coordinate without formal representation in the WMDC or an active BCC. Inpres Dt. I funds or AID funds for this activity should be utilized to strengthen the ties between WMDC and local government (Kab) through periodic meetings, joint field trips, joint evaluations, joint planning sessions, research briefings and field days. Funds should be managed at the kabupaten or project WMDC level.

DEVELOPMENT OF IRRIGATION SYSTEMS ELEMENT

INTRODUCTION ACCORDING TO THE LOAN AGREEMENT

With AID financing under the first implementation phase Citanduy River Basin Development Project Loan major improvements in the flood control system and rehabilitation of seven existing irrigation systems in the lower basin are currently underway. Feasibility studies for additional irrigation development were also financed under the loan and have been completed.

During the next phase, major new irrigation construction and rehabilitation of additional existing systems is planned, with financing to be provided by the Asian Development Bank. Emphasis of the AID development of irrigation systems project component will be on improving the capability of the local irrigation and agriculture services to provide the level of operation and maintenance and agriculture support needed to achieve and sustain the production levels upon which the economic feasibility of the systems is predicated. Rehebilitation of ten Upper Citanduy systems, which are not included in the ADB project, will also be financed under the AID project.

OBJECTIVES ACCORDING TO THE LOAN AGREEMENT

..... Irrigation construction and rehabilitation will assure the supply of water needed for a second and possibly a third crop, and encourage investment in high yield variety seed and fertilizer. Improvement of the flood control system and conservation activity in the upper watershed will reduce the damage and loss from flooding and siltation. Thus, the objectives of the development of irrigation systems are more precisely defined in terms of the remaining ingredients necessary to reach full production potential:

- adoption of the appropriate package of food production technology by farmers throughout the systems.
- adequate operations and maintenance from main systems down to the farm level.
- efficient water management to avoid conflicts and provide widest possible availability during periods of shortage.
- local capability to sustain food production increases on a permanent basis.
- rehabilitation of existing systems as recommended in feasibility reports and study of potential additional irrigation construction.

GENERAL PROJECT DESCRIPTION ACCORDING TO THE LOAN AGREEMENT

Irrigation feasibility studies, project reports, and field observations reflect a consistent pattern of problems in irrigated food production:

- Existing irrigation systems have deteriorated and the terminal systems are not complete.
- Extension services need to be strengthened in staff levels, equipment and training.
- Good quality seed is in short supply.
- Pest problems are common.
- Local irrigation sections have insufficient budgets for operation and maintenance.

The irrigation system construction and rehabilitation and existing national programs to some extent address these problems. ..... The development of irrigation systems project will, therefore, complement the existing programs and the major investment in irrigation infrastructure with special assistance to the Ciamis and Tasikmalaya agriculture and irrigation services, to meet both the short term need for intensified effort to introduce improved water management and rice production technology and the long term need to operate and maintain the systems and sustain high production levels.

To meet the short term need the project will support recruitment, training and field operations of special field teams to provide intensive training and guidance to farmers in selected target areas in all aspects of high yield rice production. Building on the efforts of these teams, and on the experience in the two on-farm and water management pilots being developed at Padaringan and Langensari, a series of models based on the tertiary bloc and tertiary bloc water users association will further test and demonstrate the comprehensive rice production technology package.

Long term needs will be met through increasing agriculture and irrigation service staffs to the full permanent levels required, training for all personnel of these services, provision of additional equipment needed, and assistance in the development of appropriate formulas both for determining specific system operations and maintenance budget requirements and for allocating the responsibility for meeting those requirements between the various levels of government and the water user associations.

The project will also provide financing for rehabilitation of ten Upper Citanduy systems. By assisting the district irrigation services in undertaking this rehabilitation, their long term management and administrative capability will be further strengthened.

Ten Upper Citanduy Systems Component According to the Loan Agreement

A feasibility study prepared by consultants under the first implementation phase AID loan provides social and economic justification for rehabilitation of ten irrigation systems in the upper Citanduy area of Ciamis and Tasikmalaya districts.....

The feasibility study stressed that implementation of all three integral aspects of the project plan should be undertaken together, i.e., "rehabilitate and improve the irrigation systems including construction of on-farm facilities, expand the field O & M capabilities of the District Irrigation Offices according to plan, and significantly strengthen the agricultural support capability of the district offices to extend to farmers in the district."....

This approach has further practical aspects in terms of total phase II project responsibilities. Placing responsibility for rehabilitation of the ten Upper Citanduy systems on the District Irrigation Offices will facilitate the desired integration with expansion of O & M capabilities and strengthening district agricultural support capability. Furthermore, the nature of the work required is suitable for this approach; the study notes that no major drainage or flood problems were identified with these ten systems.

This activity and the related budgets are divided into four parts: the cost of rehabilitation itself, O & M equipment needed by the irrigation sections, irrigation service staff and facilities needed to operate and maintain the ten systems, and increased permanent staffing for the district agriculture services.

Rehabilitation Sub-Component According to the Loan Agreement

The ten systems to be rehabilitated include four in the vicinity of Tasikmalaya (2,160 ha), four along the Ciamis Road (843 ha.), Jagabaya (605 ha.) and Wangundireja (244 ha.). The rehabilitation work will include improvement and expansion where possible, as described in the feasibility study. It is anticipated that most of the work will be performed by local contractors using labor intensive methods and locally recruited labor. AID financing is expected to be provided through reimbursement of 50 percent of the engineers cost estimates as agreed to by AID prior to the start of construction, after satisfactory completion of each unit of work. Financing procedures, fixed amounts for reimbursement, and units of work, as agreed upon by AID and the GOI, will be specified in Project Implementation Letters issued pursuant to the loan.

The feasibility study proposes a five year construction schedule, with approximately one year lead time for pre-design survey and design work. Only the four Tasikmalaya systems are scheduled for construction activity over the full five years. Since AID funding for this construction would not be available until U.S. FY 1982 and it is unlikely that construction could begin before the second year of project activity (IFY 1982/83) in any case, the Tasikmalaya construction schedule would have to be slightly compressed to permit completion by the loan project completion date of October 1986.

Project Sub-Component: Irrigation Rehabilitation
Implementing Agency: Agriculture/Public Works
(Rp.000; US$ 1.00 = Rp. 1,000)

Performance Against Physical and Funding Targets

INDONESIAN FISCAL YEAR	LOAN FUNDS ORIGINALLY BUDGETED	TOTAL ACTUAL GOI BUDGET	IMPLEMENTATION TO DATE	USAID COMMITMENT	REIMBURSEMENT TO DATE	UNUSED LOAN FUNDS
1981/82	0	0		0	0	0
1982/83	718,100	0	(as of Nov, 1984,	0	0	718,100
1983/84	920,300	204,000	40% of main, 17% of	89,932 (PIL 43)	0	830,368
1984/85	811,200	600,000	tertiary works	65,000 (PIL 66)	0	746,200
(Cumulative through 84/85)	(2,449,600)	(804,000)	(complete - see following page)	(154,932)	70	(2,294.668)
1985/86/87	776,500	1,022,008		1,624,000 for surfacing leve + contract changes	0	265,496
TOTAL	3,226,100	1,826,008		1,778,932	70	1,447,168

Explanation/Analysis:

1. Implementation: one year behind schedule (start-up year 3 instead of year 2).
2. Expenditures: expenditures are low due to lower costs than estimated.
3. Commitments: Ciloganti committed; Tasikmalaya, Cigayam, Cipalih, and Cimarongmong approved but not committed. These will likely be committed in Dec. 84. Jagabaya, Wangundirija, Cigede, Cikalang should be proposed to USAID no later than March 85.
4. Reimbursement: Ciloganti work should be immediately proposed for reimbursement. Tasikmalaya, Cigayam, Cipalih, Cimarongmong should be proposed for reimbursement by Sept. 85. Jagabaya, Wangundirija, Cigede, Cikalong, August 86.
5. Projected Loan Use: Rp. 887,597 or 28% of loan allocation.

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REHABILITATION ACCOMPLISHMENT REPORT
As of March 31, 1985
Ten Upper Citanduy Systems - Citanduy II Project

I. Main Systems

Name of System	Estimated Cost (Rp.000)	Weighted Percentage	Percentage of Accomplishment	Weighted % of Accomplishment	Remarks
CIAMIS District:					
1. Ciloganti	195,178	11.73	99.37	11.66	4 contractors
2. Cigayam	134,470	8.08	94.69	7.65	2 contractors
3. Cimarongmong	95,072	5.71	100	5.71	2 contractors
4. Cipalih/Nagawiru	209,793	12.61	98.51	12.42	3 contractors
5. Wangundireja	46,293	2.78	Not yet started		
6. Jagabaya	276,258	16.60	Not yet started		
Sub-total	957,064	57.50	65.11	37.44	616.3077 Amt. of contract
District % of Accomplishment					
TASIKMALAYA District:					
1. Citanduy/Indihiyang	145,457	8.74	98.22	8.58	2 contractors
2. Cigede	135,281	8.13	Not yet started		
3. Cimulu	363,716	21.86	Not yet started		
4. Cikalang	62,800	3.77	Not yet started		
Sub-total	707,254	42.50	20.18	8.58	137.1206 Amt. of contract
District % of Accomplishment					
TOTAL MAIN SYSTEMS	1,664,318	100.00	46.02	46.02	753.4283 Amt. of contract

II. Tertiary Systems

1. Ciloganti	32,369	20.02	100	20.02	31.2204 Amt. of Contract.
2. Cimarongmong	22,512	13.92		Not yet started	
3. Jagabaya	56,543	34.97		Not yet started	
4. Citanduy/Indihiyang	50,266	31.09		Not yet started	
Total	161,69	100.00	20.02	20.02	

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O&M Equipment Sub-Component According to the Loan Agreement

Occasional needs for heavy equipment can be met from the Pataruman equipment pool maintained by the BCWRD Project Office in Banjar. The project would provide light construction and transport equipment for the routine O&M requirements of the Irrigation Sections as proposed in the feasibility report.

Project Sub-Component: O&M Equipment
Implementing Agency: Public Works
(Rp.000; US$ 1.00 = Rp. 1,000)

Performance Against Physical and Funding Targets

INDONESIAN FISCAL YEAR	LOAN FUNDS ORIGINALLY BUDGETED	TOTAL ACTUAL GOI BUDGET	IMPLEMENTATION TO DATE	USAID COMMITMENT	REIMBURSEMENT TO DATE	UNUSED LOAN FUNDS
1981/82		0		0	0	123,200
1982/83	(Loan Agreement total	25,000	250 bicycles;14 motor-cycles procured	0	0	123,200
1983/84	of $260,000 revised	0		0	0	123,200
1984/85	by PIL 6 to $123,200	0		28,000	0	95,200
(Cumulative through 84/85)	over life-of-project)	(25,000)		(28,000)	0	(95,200)
1985/86		86,000 (Est.)	Equipment Proposal	86,000 (Est.)	0	(37,200)
TOTAL	123,200	111,000		114,000	0	92,000

Explanation/Analysis:

1. Implementation: bicycles/motor-cycles purchased by GOI per loan agreement; equipment now proposed to AID under loan agreement target.
2. Commitment: proposal with USAID.
3. Reimbursement: local or donor procurement (direct USAID).
4. Projected loan use: Rp.86,000,000 or 70%.
5. Remedial steps: remaining Rp. 37,200,000 can be reallocated.
6. Consultant study on time Nov. 83.: a. good involvement of sekai irigasi; b. good parts inventory; c. good management, but delays in procurement due to confusion within GOI and between USAID/GOI.

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Irrigation Service Staff and Facilities Sub-Component According to the Loan Agreement

Additional personnel requirements of the Ciamis and Tasikmalaya Irrigation Service Sections to operate and maintain the rehabilitated systems at the appropriate level of responsibility and efficiency are identified in the feasibility study as are the requirements for specific facilities such as housing for irrigation controllers at the weirs and storage sheds for equipment and materials. A supply of O & M materials is also required and identified in the study.

Progress to Date: No information available. Funding all GOI.

Agriculture Service Permanent Staff Increase Sub-Component According to the Loan Agreement

The feasibility study provides an analysis of current Agriculture Service staff levels and budget for Ciamis district and a projection of the increases needed to provide adequate extension coverage. Other changes, including redefining program responsibilities of the PPLs and changes in the orientation of their work and establishment of an integrated pest control program are also proposed. The budget for this input item includes only the amount of the increase required to bring permanent staffing up to the government minimum recommended level during the project period (temporary extension teams are covered separately below). Implementation of this activity will be through and in accordance with existing national programs and policies.

Progress to Date:

Funding all GOI.
In district Ciamis the increase is from 153 men in 1981 to 347 men in 1984, or 227%, and 104 men or 43% above the target in the Loan Agreement of 243 men. In district Tasikmalaya there are 57 new permanent, but there was no base established for this district in the Loan Agreement.

There is little need for more increases in the permanent Agriculture Foodcrops Service staff, except for filling vacancies in the PPL and Pest Control ranks. This is not the case with the other sectors, like Estate Crops, Fisheries, and Animal Husbandry where numbers of extension agents remain relatively low.

Introduction of Water Management and High Yield Rice Technology Component According to the Loan Agreement

Off-farm water management for maximum efficiency of technical irrigation and high yield rice production technology represent significant departures from traditional rice cultivation practices. The large investments in irrigation system infra-structure in the basin make it imperative that this technology be spread rapidly, both to achieve the production increases which provide economic justification for that investment and to accommodate the increased demands for water in expanded areas of irrigation service.

Agriculture Extension Teams Sub-Component According to the Loan Agreement

To supplement the permanent agriculture extension forces, five teams, each composed of a supervisor, five senior field extension workers and ten junior field workers, would be recruited, trained and supported during the first three years of the project. Each team would provide concentrated training and guidance for full year to farmers in two adjacent irrigation service areas. Each of the two areas would be about 150 ha., with 300-450 farm families, and composed of one or more tertiary blocks. The team would split up to work closely with smaller groups of farmers in all phases of the rice production cycle, giving particular attention to water management, scheduling, and the organization necessary for effective technical irrigation operations. Seed, fertilizer and pesticides will be provided under the regular BIMAS/INMAS programs, with the teams providing more intensive guidance than is normally available, helping farmers with specific problems, and offering feedback regarding difficulties with the program.

At the end of a full year cycle, each team would move to a new location to repeat the process, again in two adjacent irrigation service areas. Since probably only two teams can be in place the first year, approximately 22-24 target areas would receive this treatment during the three year period. The target areas would be in the seven irrigation systems being rehabilitated with AID Phase I loan assistance as well as the ten Upper Citanduy systems to be rehabilitated under Phase II. During the third year, the program would be evaluated and continued, expanded or dropped, depending on results and availability of funds. If the program is discontinued, a pool of trained extension personnel would be available to fill vacancies in the regular extension service.

Model Irrigation Blocs/Systems Sub-Component According to the Loan Agreement

Project funds will be made available for accelerated efforts to introduce efficient on-farm water management together with the complete package of high yield technology. These efforts will be concentrated in 19 "model" blocs distributed among the 17 technical irrigation systems being rehabilitated with AID financing in phase I and phase II and in 12 rural and sederhana systems. Costs for the latter would be relatively higher because much of the necessary terminal system layout and development work is already being done in conjunction with rehabilitation of the technical systems.

The model irrigation bloc activity is expected to include demonstration of water management techniques including rotational irrigation and scheduling of farm operations, cropping patterns including secondary crops, soil testing and site specific fertilizer applications, pest control, and harvest/post harvest handling. Agriculture inputs - seeds, fertilizer and pesticides - would be provided under the regular BIMAS/INMAS program, however, project funds would be available for materials needed to demonstrate the technology which might include agriculture inputs on small demonstration plots within the model blocs. Staffing would be provided by the regular extension service and the temporary extension teams.

Details of the activities to be undertaken will be planned by the district governments (irrigation and agriculture services), based on the pilot on-farm water management program currently underway through cooperative effort of the Citanduy Project Office, Project Consultants and the Ciamis District Irrigation and Agriculture Services. Personnel of the project level offices of Public Works and Agriculture will assist in preparation of these plans which will be subject to approval by the Basin Coordinating Committee and AID prior to implementation.

Introduction of Water Management and High Yield Rice Technology Component as Redefined by PIL's 6 and 11:

Model Blocs and Extension were combi ! into one activity for joint implementation by Public Works and Agriculture. Loan Agreement funding obligations changed from respective $200,000 and $246,300 to a combined $383,000. Activity re-defined as follows:

- 22 model blocs of 100 ha. each, total 2,200 ha;
- USAID-funding to cover the following:
  a. Up to a maximum of $100/ha for physical improvement of model-block structures, alignment, drainage, etc. Work under this component will be performed by the water users under the direction of the village LMMD. Designs will be done by Project Citanduy, Public Works; and supervision of the work of installing physical improvements will be done by the Kabupaten Irrigation Section and Proyek Citanduy.
  b. Up to a maximum of $60/ha for agro-inputs (seed, etc.) and hydrological equipment. Agricultural inputs will be provided for only one year (up to 3 planning seasons) per model block.
  c. Up to a maximum of $14/ha for harvest/post-harvest expenses, e.g., drying, weighing, storing, etc.

Project Component: Model Irrigation Blocks and Extension
Implementing Agency: Agriculture/Public Works
(Rp.000; US$ 1.00 = Rp. 1,000)

Performance Against Physical and Funding Targets

INDONESIAN FISCAL YEAR	LOAN FUNDS GOI BUDGET	TOTAL ACTUAL EXPENDITURE	IMPLEMENTATION TO DATE	USAID COMMITMENT	REIMBURSEMENT TO DATE	[illegible] LOAN FUNDS
1981/82		0	0	0	0	383,000
1982/83	(Loan Agreement totals	29,400	5 blocs established	0	0	383,000
1983/84	revised by PILs 6 & 11	18,456	6 blocs established	0	0	383,000
1984/85	to life-of-project	45,927	11 blocs established	131,126 (PIL 6J)	0	251,874
(Cumulative through 84/85)	total of $383,000)	(93,783)	(22 blocs established)	(131,126)	(0)	(251,874)
1985/86		100,350(Est.)	8 blocs anticipated	130,000 (Est.)	0	263,879
TOTAL	383,000	194,133		261,126	0	121,874

Explanation/Analysis:

1. Implementation: Model bloc formation ahead of target by 6; 28 actual, 22 PIL 11.
2. Expenditures: eligible expenditures below loan agreement target (some agro-inputs; no physical irrigation works improvement; joint implementation of physical works by two agencies (Agriculture and Irrigation Sections) has not worked well; GOI proposals and hence pre-finance prepared late).
3. Commitments: commitments have been withheld by AID until recently due to vehicle cold/distribution.
4. Reimbursement: Nihil.
5. Remedial steps: 82/83, 83/84, 84/85 activities already implemented should be reproposed for commitment and reimbursement by USAID. Physical works improvement proposals for work originally scheduled for 82/83, 83/84, 84/85, and 85/86 should be clarified to USAID for commitment (for implementation in 85/86).

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Assessment
Model Blocs/Extension

PROGRESS TO DATE	ISSUES AND PROBLEMS	RECOMMENDATIONS
Adoption of rice and secondary crops technology by farmers is very high. The average yield of rice in districts Ciamis and Tasikmalaya is about 40 qt/ha harvest dry, higher than the national average of 35 qt/ha. The INSUS (special groups activities in) RICE produce on average 70 qt/ha. All of these are achieved by the use of the Panca Usaha Padi (Five Effort in Rice Production), use of high yielding varieties, use of fertilizers, good soil preparation, better water distribution, & application of good pest control. The recommended 3 crops in one year in the irrigated rice fields has become more common. In Ciamis a cropping pattern of rice-rice-soybean was followed on 900 ha in 1983-84; three years before it was unheard of. In Tasikmalaya an area of 1,000 was claimed in 1983-84 for this 3 crops pattern. Availability of capable lowland extension workers in the districts Tasikmalaya & Ciamis has been achieved by intensive training programmes, good supervision by Rural Extension Center personnel, and somewhat also by available literature and extension materials. Cooperation between local Agriculture Services & Irrigation Sections in Ciamis & Tasikmalaya is improved over already good levels of three years ago. Agriculture Services have participated in the planning of the rehabilitation of 10 irrigation systems; Irrigation Sections take part in the effort to establish strong water users association in both districts. Few technical problems, but some management ones: a) synchronization of extension & supply of production inputs; b) synchronization of third crop with irrigation water distribution. Usually the third crop gets less water or none at all. Agriculture Special Extension Teams for the Model Irrigation Blocks have been established according the Loan Agreement, five in total: four in Ciamis and one in Tasikmalaya. These teams appear to have a significant impact in the establishment of Model Irrigation Blocks and the spread of new technology to surrounding areas.	1982/83 and 1983/84 integrated plans for model blocks, were not considered for commitment of loan funds by AID due to vehicle maldistribution. In lieu of this, the selection of model blocks, distribution of ag. inputs, harvest/post harvest activities, as well as on-farm water management extension has been implemented through 84/85 by the GOI alone. However, the physical irrigation improvements planned for 82/83 and 83/84 were not implemented due to lack of GOI funds. 1984/85 physical improvements have not been signed. Now, vehicle maldistribution has been resolved, & AID will entertain plans for commitment of AID funds. However, consultant assistance to lowland agriculture has ended, as model block agriculture activity is 75% complete and already surpasses Loan Agreement targets, & the key P.U. Citanduy counterpart for model block physical improvement is undergoing academic overseas training. The ag. inputs/extension activities present only retroactive reimbursement problems, as it is an ongoing activity. Physical irrigation improvement designs & implementation will present greater difficulties in terms of assistance to Kab. Irrigation sections by Project Citanduy Bandjar and/or consultants for 19 new model block improvement designs and 11 updated model block improvement designs as well as implementation of improvements in 30 model blocks. No GOI counterpart budget has been identified for this activity.	Retroactive proposal for ag. inputs, harvest/post-harvest costs from 82/83, 83/84, and 84/85 should be formally proposed for commitment by AID, and 85/86 proposals should be submitted to AID for commitment (separately if necessary). Physical improvement designs for 82/83 and 83/84 model block designs (11) should be revised and resubmitted for commitment by AID and implemented in 85/86. Physical improvement designs for 84/85 and 84/86 be prepared (19), submitted to AID for commitment and implemented in 85/86 if possible, 86/87 if necessary.

Paterumaa Shop Equipment Component According to the Loan Agreement

The Paterumaa equipment shop at the Public Works Citanduy Project headquarters has been established to serve major equipment needs throughout the basin. Heavy equipment is available for rental, for example, for occasional irrigation maintenance needs. The equipment shop, although not yet fully staffed, has been designed and equipped for maintenance capability up to and including major heavy equipment overhaul. Some additional shop equipment is needed to bring the shop up to full echelon V status and funds are included in the project budget for this purpose. The budget amount is a Project Office estimate and a specific list of the required equipment will need to be prepared, with consultant assistance, for AID approval prior to initiating procurement. A second precondition for this procurement will be a firm schedule for fully staffing the shop.

Project Component: Paterumaa Workshop
Implementing Agency: Public Works
(Rp.000; US$ 1.00 = Rp. 1,000)

Performance Against Physical and Funding Targets

INDONESIAN FISCAL YEAR	LOAN FUNDS ORIGINALLY BUDGETED	TOTAL ACTUAL EXPENDITURE TO DATE	IMPLEMENTATION TO DATE	USAID COMMITMENT	REIMBURSEMENT TO DATE	ANTICIPATED UNEXPENDED LOAN FUNDS AT PACD
Life of project	120,000	25,000 50,000 (anticipated)	Equipment procured 0	25,000 (PIL 32) 105,000 (anticipated)	24,000 0	)) 0)

Explanation/Analysis:

Remedial Steps: Propose additional procurement or reallocate Rp. 45,000,000.

South Lakbok/Rawa Cilalai Irrigation Feasibility Study According to the Loan Agreement

Earlier studies of the feasibility of a new irrigation system in South Lakbok will be updated and will include the Rawa Cilalai. The study will be undertaken by consultants and input requirements are included under that section.

Progress to date: Study complete, feasibility confirmed. Recommendations not being applied but plans now being made to tender for local design consultants to prepare actual design with design assistance to be provided by a project consultant.

LOCAL DEVELOPMENT PLANNING AND MANAGEMENT ELEMENT

Objectives According to the Loan Agreement

Broad objectives of the Citanduy Basin development program are to protect the capability of the basin's soil and water resources and to develop the capability of those resources, and its human resources, to increase agricultural production. More specific objectives of the local development planning and management component are:

- enhanced capability within the local governments in the basin to plan and manage integrated development.
- annual district development plans which progressively reflect increased local inputs, improved priority setting and realistic and timely resource allocation.
- development activity which reflects the improved planning and management capability.
- an updated comprehensive Master Plan for development of the Citanduy Basin.
- an improved management organization which facilitates increased participation in coherent development programs by the many sectoral agencies and local governments.
- a permanent organization for local management of the basin's water resources, with authority to establish priorities for their use and resolve conflicts both within and among the local administrative jurisdictions.

General Project Description According to the Loan Agreement

...The project will provide training and consultant assistance to district government personnel to enhance their planning and management capability. Special attention will be given to local finance and administration, particularly as related to irrigation operations and maintenance. Feasible and technical assistance will also be provided for small scale projects not included in, but complementary to the upper watershed and irrigation components of the project, with further specification left to the local participation process.

The management of an integrated basin development program will also receive specific attention under this project, with consultant assistance for review of the project management organization. During the third year, consultant assistance will be provided to update the Basin Master Plan, with participation by both district and basin project-level planners.

Local Initiative Projects Component According to the Loan Agreement

Under the local initiative projects activity, funds will be made available to the local governments at the district level for a number of small scale projects which involve participation by the rural poor and are responsive to their needs. These projects will be expected to complement the upper watershed development and irrigated rice production project activities with related activities not covered by those project components. They might include food processing, local handicrafts, and other rural industry, but project specification will be left to local initiative.

Procedures for funding will be similar to those used in the PDP project, using the INPRES channel. AID will reimburse two thirds of the cost of each project approved in advance by the Basin Coordinating Committee and AID. The Basin Coordinating Committee will allocate the available funds with due reference to area and population in the basin.

Project Component: Local Initiatives
Implementing Agency: BAPPEDA
(Rp.000; US$ 1.00 = Rp. 1,000)

Performance Against Physical and Funding Targets

INDONESIAN FISCAL YEAR	LOAN FUNDS ORIGINALLY BUDGETED	TOTAL ACTUAL GOI BUDGET	IMPLEMENTATION TO DATE	USAID COMMITMENT	REIMBURSEMENT TO DATE	UNUSED LOAN FUNDS
1981/82	100,800	0	0	0	0	100,800
1982/83	100,800	175,425	100%	0	0	100,800
1983/84	100,800	162,399	100%	0	0	100,800
1984/85	100,800	263,075	Implementation 50%	112,000 PIL 58	0	11,200
(Cumulative through 84/85)	(403,200)	(600,899)	(-)	(112,000)	(0)	(291,200)
1985/86	100,800	505,235(est.)	-	338,507 (Est.)	0	-237,707
TOTAL	504,000	1,106,134		450,507 (Est.)	0	53,493

Explanation/Analysis:

1. Implementation: recovery from one year late start. GOI providing funding beyond Loan Agreement targets
2. Commitments: 82/83 and 83/84 proposals have not been submitted to USAID . GOI intends to submit retroactively. 84/85 is committed (PIL 58) while 85/86 will be submitted to AID in March 85.
3. Reimbursement: 84/85 commitments can be proposed for reimbursement beginning July 86.
4. Projected loan use: without retroactive submission to USAID of 82/83, 83/84 local initiatives: Rp.465,507,000 or 92% of loan allocation.
5. Remedial steps: immediate submission of 82/83, 83/84 proposals (project statements and budget per activity) to BAKORDA, Dec. 84, and USAID, Jan. 85. Reduction of ineligible budget items to minimal levels to maximize reimbursement rate (67%). Or allocation to new Local Initiatives or to other activities

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Assessment
Local Initiative Projects

Activity	Progress to Date	Issues and Problems	Conclusions/Recommendations
Local Initiative Projects	For IFY 1982/83, 31 projects were funded by GOI Inpres Dati I but proposals never submitted to USAID. Implementation complete. For IFY 1983/84, 25 projects funded by GOI Inpres Dati I but proposals not submitted to USAID. Implementation about 50% complete. For IFY 1984/85, 29 projects were proposed to AID, 28 approved (PIL 58). Implementation to begin February 1985. IFY 1985/86 project proposals already prepared in rough form. GOI support for this activity is demonstrated by funding made available in excess of Loan Agreement targets: Rp. 157,500,000 in Loan Agreement, Rp. 369,000,000 actual by PACD (assuming USAID retroactive approval and reimbursement of IFY 82/83 and 83/84 Initiatives) or Rp. 640,627,000 (otherwise).	Local Initiatives have proved extremely popular with kabupaten government. This is positive in that it increases kabupaten participation in the project as a whole. But although projects can all, in one sense or another, be said to complement Citanduy II purposes, there is scope to focus them more tightly in support of the core project activities. The Loan Agreement did not provide guidelines to do so. Partly because AID has not been involved until recently (IFY 1984/85 proposals), AID has not provided sufficient support to consultants' efforts to maximize complementarity between Local Initiatives and rest of project. Allocation by GOI of Inpres funds for Local Initiatives both between provinces and between kabupatens results in some kabupatens over-funded (hence too many poorly planned Initiatives) and some under-funded. Allocation is not necessarily in accordance with level of Citanduy II activity in respective areas or with need or ability to use funds constructively. Allocation by local government tends to be based on concept of equitable distribution of funds between Dinases rather than in accordance with Citanduy II project needs. Kabupatens appear to monitor and evaluate Local Initiatives carefully. Format and conclusions of this work are not yet known by USAID.	Local Initiatives are potentially one of the most productive Citanduy II activities: a) because they elicit participation and strong support of local government, and b) because they offer the flexibility to address Citanduy II project shortcomings in ways that conventional sectoral GOI and AID funding cannot. It may be too late to further these purposes (last full GOI budget cycle, 1985/86, in the project is already underway) before the PACD. If the PACD were extended, much could be accomplished by direct discussions with Bappedas I and II to: 1) rationalize allocation of Initiative funds; 2) design, along with P3RPDAS, Initiatives which address in a variety of ways major identified problems of Citanduy II e.g. seed multiplication, alternative cropping patterns, livestock in expansion areas, etc.,; 3) monitor and evaluate results carefully and incorporate findings into future efforts; 4) feed results back into WHBC technical planning or other upland projects.

Socio-Economic Research Component According to the Loan Agreement

A key purpose of project evaluation will be to provide information to project management for "fine-tuning" immediate implementation plans in terms of timing, incentives, farmers' organizations and other strategic considerations so that the project responds to local conditions and felt needs. A second major purpose of evaluation will be to provide information required for a review and update of the 1975 Master Plan for the Citanduy Basin.

In order to provide a basis for evaluation of the socio-economic aspects of the project, a base-line survey will be undertaken during the first year. Follow-on survey research activity throughout the life of the project, including special studies and broad based surveys for project benefit monitoring will be useful not only for the evaluation purposes mentioned above, but also for evaluation of the area development approach and implications for development elsewhere.

A preliminary review of survey research institutional capabilities in Indonesia was made for USAID in 1979. While such capabilities exist, the institutions were found to already have a greater demand for their services than they can meet. Thus, development of new capability to meet the needs of the Citanduy project will also serve larger national requirements. This will be done by establishing a full time Socio-Economic Research Unit in the basin, in association with one or more universities and with consultant assistance.

The Socio-Economic Research Unit will be expected to maintain a close relationship with the BAPPEDAs at both provincial and district levels as well as with technical schools in the basin. These entities will benefit from the findings of the research and the schools will be a prime source for temporary research personnel who, in turn, will benefit from the experience of working with personnel experienced in survey-research.

The Socio-Economic Research Unit will be funded annually, with most of the funds coming from the AID grant. After performing its initial function of conducting the baseline survey, the unit will prepare and submit its work plans, as well as research reports, to the Basin Coordinating Committee for review. Priority will be given to research required to carry out the upper watershed development program and prepare the watershed master plan and that needed in connection with the project activity supporting irrigated food production.

Component: Local Development Planning and Management
Sub-Component: Socio-Economic Research
(U.S. $)

LOAN/GRANT ALLOCATIONS	COMMITMENTS TO DATE	USED OF FUNDS	ACCRUED EXPENDITURE	ANTICIPATED COMMITMENT AND EXPENDITURE BY PACD	ANTICIPATED UNUSED LOAN/ GRANT FUNDS AT PACD
I. Loan/Grant Agreements allocated $678,000 (life-of-project) for Socio-Economic Research to be "mostly grant" but exact Loan/Grant split unspecified. PIL's 6 and 42 modified this as shown below with uses shown on right:					
Loan: $5,700	0	-	0	0	$ 5,700
Grant: $815,000					
1) Socio-Economic Research TA $255,000 and Additional Socio-Economic Research TA $250,000 plus $10,000 for Bartlett 3 mo. extension. PIO/T 0050 plus one additional year of TA.	$324,000	Salary, housing and other expenses for Personal Service Contractors King (6/82 to 7/83) and Bartlett (7/83 to present). PSC's to assist establish Basin Socio-Economic Research Unit (SERU) and advise SERU operations.	$372,000	$505,000	0
2) Socio-Economic Research Local Costs $310,000. Add $32,000 for computer and additional budget.	$147,000	Salaries and operating costs for SERU Operations initiated 11/1/84.	$ 48,000	$310,000	0
II. Due to slow start-up of USESE PIL 38 (Feb. 1984) committed an additional $115,200 of loan funds from the Watershed Development Planning element plus $6,000 for base line study (Sultoni).	$121,000	Contract with AARD for "ex post" and "ex ante" surveys of farm household acceptance of project's upland agricultural package.	$ 57,000	$121,000	0 (accounted for under Upper Watershed Development)
III. Contingency (Grant) tapped Dec. 1984.	$ 18,000 (Est.)	Panawangan Impact Study	$ 18,000	$ 18,000	0 (from contingency)

* GOI counterpart budget of $110,000 per Loan/Grant Agreements. Home Affairs/Bappedas are paying for SERU office rent (o/a 2/83 - PACD), SERU Director's housing costs (o/a 11/1/84 - PACD), 5 full-time Bappeda II USESE counterparts, and up to Rp.20,000,000 (Central Java) for yet-to-be specified USESE local costs.

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Assessment
Socio-Economic Research

Detail of Expected Outputs	Progress to Date	Issues and Problems	Conclusion/Recommendations
Socio-Economic research to "fine-tune" project implementation. Socio-Economic research to review and update Basin Master Plan. Baseline Survey Establish full time Socio-Economic Research Unit in Basin, not from over worked universities. Maintain close links and transfer skills to BAPPEDA's.	Baseline survey instrument contracted in 1979 with non-Citanduy II funds proved unacceptable. Not used. Socio-Economic Research Unit (SERU), scheduled to begin 1981, formally established 1983, began operations November, 1984. AARD upland technology "acceptance studies" initiated Feb. 1984. Draft analysis and conclusions of first of four surveys has been prepared; second survey in data tabulation phase; third survey now in data collection phase; fourth survey data collection in early 1985. Panawangan Impact Study draft complete. A variety of related non-project-funded economic studies have been undertaken. Examples: 1) Model Farm farmers inputs/outputs before/after acceptance of new technology (P3RPDAS). 2) Farm Operation changes induced by Model Farming (P3RPDAS). 3) B/C analysis of adoption of new technology (P3RPDAS - not yet funded).	Protracted difference of opinion between GOI and USAID over form and staffing of SERU delayed start-up 3 years. There thus is not and will not be a baseline survey. SERU is now established but is yet untested. SERU research results will not begin to filter in until mid or late 1985, too late to affect project planning or to contribute substantially to update of Basin Master Plan as the latter is presently scheduled. The AARD and Panawangan Impact studies are also too late to affect project planning although may have some use for update of Basin Master Plan. Relationship of socio-economic or even agro-economic findings to upland project planning are not clear. There is no formal role at present.	Difficulties initiating a coordinated socio-economic or agro-economic program have prevented Citanduy II from fully exploring formal mechanisms (or even informal sensitivities) to incorporate social and economic factors into efforts to spread upland technology. The usefulness of what has been learned or will be learned by the PACD thus depends: a) on SERU's ability to pull together the disparate research efforts into a coherent set of findings/recommendations. b) the application of those findings/recommendations to Citanduy local government, other upland efforts (Regreening, Upland Agriculture and Conservation), and/or to any continued project activities in Citanduy. c) the transfer of research methodology skills and an awareness of uplands social/agricultural/economic conditions to local government and national institutions by involving them in data collection and assessment.

TRAINING

Upland Training According to the Loan Agreement

Expansion of the national agriculture training capability is also continuing with World Bank loan assistance. Existing facilities will be made available to provide at least part of the training required for the upper watershed project in the Citanduy Basin. Basic training in agriculture and extension methodology will be provided at the Agriculture Training Center in Lembang, and facilities of the Agriculture Development School (Forestry) in Kadipaten may be available for some soil conservation and forestry training.

Although there is urgent need to increase agriculture development efforts in the nation's upland areas, especially on Java, there is at present no national training center specializing in upland agriculture, nor is such a center included in the expansion project financed by the World Bank. Therefore, facilities of the Citanduy Basin Watershed Development Center will include a capability for conducting special project training which cannot be accommodated elsewhere and will be designed to be suitable for expansion and permanent use as a national upland agriculture training center.

Field training of extention personnel, village and farm leaders will also be undertaken using existing Rural Extension Centers where feasible and the five Watershed Development Subcenters.

Most of the training for the upper watershed development project will be conducted in Indonesia, and will include both standard courses already available and courses specially developed for project needs.

Lowland Training According to the Loan Agreement

In addition to agriculture extension team training, training will be provided for existing and new permanent agriculture and irrigation service personnel. This training will be supplementary to the training available under existing programs and will consist primarily of special short courses conducted in the basin and tapping a variety of available resources including project staff, consultants, and lecturers brought in from such institutions as university agriculture faculties, research institutes, and private agencies. The training will include such areas as water management, pest control, problem soils, and community development and organization.

Farm leaders and leaders of water users associations will also receive training in specially arranged short courses which will include water management, high yield rice technology, and the skills necessary for farm and association management such as record keeping and financial management. A tour to a successful established water users association is expected to be a part of this training.

Finally, senior agriculture and irrigation service personnel responsible for irrigated rice production in the basin will participate in other non-academic study programs both in Indonesia and overseas, as well as in overseas academic programs.

Local Development Planning and Management Training According to the Loan Agreement

The project would complement national programs for increasing local planning and management capability with assistance specifically geared to conditions and problems in the Citanduy Basin and to the upper watershed development and irrigation project activities. Other major AID financed projects with relevance to this training activity include the Provincial Area Development Project (PDP) and Local Government Training (LGT II).

PDP is currently providing assistance in development planning and management to the BAPPEDAs of both West and Central Java. While the PDP assistance is targeted in areas outside the basin, the experience at the provincial level will be of benefit for a similar activity in the project area. BAPPEDA II officials from districts in the basin have already benefited from PDP sponsored training courses.

LGT II implementation is to begin at about the same time as Citanduy II and will provide an opportunity for local officials in the basin to receive training once the facility serving the area is in operation. Consequently, local development planning and management project training activity will be undertaken in anticipation of this additional resource. Most of the training will be through transfer of knowledge by consultants as they work directly with the local officials. These consultants will be expected to coordinate their efforts with LGT II plans. Limited funding will be provided for conducting special short courses and workshops as well as for participation by local officials in seminars and other non-academic short term training both in Indonesia and other countries.

Training Assessment
Progress-to-Date (Estimate)
(U.S.$000 or Rp.000,000)

	LOAN AGREEMENT TARGETS (PERSON WEEKS)	AID ($)	GOI ($)	IMPLEMENTATION TO DATE (PERSON WEEKS)	AID ($)	GOI ($)
I. Upper Watershed						
a. In country non-academic extension & farm leaders	6281	733.0	222.3	1805	22	111
b. In country Academic	312	21.9	-	-0-	-	-
c. Overseas non-academic	892	323.0	-	102	90 (+250) SCS	-
d. Overseas Academic	104	33.0	-	208 2 MS (projected by PACD)	140(est.)	-
Sub-total	7589	1,110.9	222.3	2115	252	111
II. Irrigation Services						
a. In country non-academic	4712	656.1	36.5	1040	73	6
b. In country academic	-0-	-0-	-0-	-0-	-0-	-0-
c. Overseas Non-Academic	45	37.7	-0-	58	43	-0-
d. Overseas Academic	484	102.8	-0-	-0-	-0-	-0-
Sub-total	5241	796.6	36.5	1098	116	6
III. Local Dev. Planning & Mgt.						
a. In country	not defined	49.0	-0-	Workshops (16)	4	-0-
b. Overseas	not defined	50.0	-0-	community dev. (12) non-academic	12	-0-
Sub-Total	-	89.0	-0-	28	16	-0-
I + II + III	12,830	1,996.5	258.8	3,241	314	117

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ASSESSMENT
TRAINING

DETAIL OF EXPECTED OUTPUTS	PROGRESS-TO-DATE	PROBLEMS AND ISSUES	RECOMMENDATIONS
A. Upper Watershed Training 1. The availability of well trained and capable PPL, PPM and PPS in basic agriculture and extension methodology, conservation technology community development. 2. The availability of professionals in watershed planning and management.	In-country training: short of the goals of agreement. Totals: 1805 person weeks, upland; 1040 person weeks, lowland. Total 2,845 person weeks has been completed. Loan agreement target, 11,305 person weeks. Overseas Training: One person only is in U.S. MA Program; one other person is currently in an English language program preparing to depart. At least up to twenty people could have been nominated.	1. Over twelve thousand person-weeks of training were planned in the Loan/Grant Agreements but the project did not provide for the management system which would have been required to implement quality training of this quantity. Turnover of project training consultants has retarded progress (there have been two successive long term advisors and three successive short-term advisors). Lack of identifiable GOI training counterpart has also retarded progress although this has improved since September 1984.	I. In Country: A stronger coordinating function is necessary, or each ministry should plan, program, and implement their own portion of the Citanduy training. Twelve hundred man-weeks at a minimum, could be planned for 1985/86. Shift emphasis to farming systems, management, administration, trainer training. The coordinating function would require the full time attention of one person. Also the contractor, BMI, should have a more active involvement with the Jakarta-based government officials.
B. Irrigation Services Training 1. The availability of capable special agriculture services personnel in production, water management, pest control, problem soils, community development and organization.	172 person weeks of non-academic overseas training has been completed.	2. Funding and management of training was divided into two: the BMI contractor was to manage $600,000 of training funds (loan) primarily for overseas (or "selected" in-country) training while the various GOI departments were to manage the remainder (also loan) for in-country training.	II. Overseas: The GOI is recommending an accelerated program which, if implemented, will result in: - eleven MA programs USA. - sixteen MA programs ASIA. - twelve post graduate programs Indonesia. USAID must decided how to deal with these given the PACD of 9/30/86. One trainee, now overseas, and another about to depart must be abandoned.
2. The availability of farm and water user organization leaders capable in water management, high yield rice technology, association management such as record keeping and financial management.	Some training for 1982/83, 1983/84, 1984/85, has been completed without prior USAID approval and subsequent GOI application for reimbursement.	Overseas Training: Jakarta level of government has assumed all responsibility for overseas training nominations. Short-term overseas training has been provided only to Jakarta based officers (although low English capability outside Jakarta may have made this inevitable). BAPPENAS policy restricting short-term loan-funded overseas training has also limited opportunities. Long term training has moved slowly due to few nominees: despite repeated requests, neither BMI contractor nor USAID received nominations until July 1984.	III. A trimed down training program could stand on its own after the PACD even if all other project activities were stopped. Management of selection, placement and maintenance would have to be assured. IV. Consultant's training and training management plan should be considered for incorporation into UAC project.
3. The availability of capable senior agriculture and irrigation service personnel for irrigated rice production.	Project training and training management plan, called for in consultant contract, almost complete.		

DETAIL OF EXPECTED OUTPUTS	PROGRESS-TO-DATE	PROBLEMS AND ISSUES	RECOMMENDATIONS
C. Local Development Training 1. The strengthening of the bility of local government personnel/Bappedas for a more comprehensive and multi-sectoral area development planning. 2. The strengthening of the capability of local technical agencies in local development administration and financial management, geared to the upper watershed development and irrigation project activities.		Public Works (Directorate of Rivers overseas trainees have other sources of funds for overseas training. The attractiveness of long term overseas training to Basin-level GOI staff is generally low. In-country Training: National Steering Committee Secretariat establish a training committee staffed by the Ministry of Agriculture's BPLPP. Basin-initiated training proposals have tended to be stopped or delayed by this committee. Jakarta0initiated training proposals tend to bypass the committee, are submitted directly to USAID by respective ministries, and thus get funded. Change at BPLPP (9/84) has helped but concept of one ministry coordinating training for three others and for local government was impractical. Emphasis to date has been on agriculture cropping systems, still lacking in livestock, perennials, horticulture, fisheries, as well as project management and administration, trainer training. 3. Training and training management plan has limited usefulness at this stage of the project.	

PROJECT ORGANIZATION AND MANAGEMENT

I. Upper Watershed Program Management Concepts According to Loan Agreement

Organization for management of upland agricultural development must accommodate both the need for an integrated multi-disciplinary team approach and the decentralization and local control essential for maximum participation, acceptance and perpetuation of conservation farming practices.

The MOA will establish, at the project level, a multi-disciplinary team of technical personnel from various agencies. Unified leadership will be provided by a single agriculture project manager, who will be appointed by the Minister of Agriculture and will be responsible for all MOA project activity and represent the Ministry and the agriculture sector on the Basin Coordinating Committee.

Field staff, in particular field extension personnel and extension supervisors will also reflect this multidisciplinary approach. Each polyvalent extension worker will represent all relevant agriculture technical areas.

Local governments have a major role in upper watershed development, including the agriculture sector. While the central project organization provides coordinated resources and technical guidance, field activities will be undertaken within the framework of district administrative organization. Local government and the project technical staff will jointly identify project field sites. The multidisciplinary extension personnel will become part of the permanent district agriculture services. As the program expands, additional technical specialists needed for the uplands, will also be added at appropriate levels within the agriculture extension network. Further, certain project components — e.g., the construction of access roads, and expansion of the upland technology package beyond the model plots, with the upland credit program an essential feature, will be administered by local government with funding through the INPRES mechanism.

Comprehensive Basin Development Organization According to Loan Agreement

The upper watershed development project is itself one component of a comprehensive multisector development project for the Citanduy Basin. In addition to the upland development activities, A.I.D. assistance will be provided for development of irrigation systems and improving local development planning and management capabilities, while the ADB will finance major new irrigation construction and rehabilitation of four existing systems in Central Java. A strong project management structure is essential for project success. Three ministries share major project implementation responsibilities — Home Affairs, Public Works and Agriculture. The existing Public Works Project Office will continue to have major project responsibilities with additional large investments in irrigation construction planned. Home Affairs, through the local governments, has an essential role both in overall planning and management of development in the region and in expanding local participation in project sectoral development activity.

Strengthening the coordinate function of local government will be an important measure in overcoming the difficulty one sectoral agency would face in coordinating implementation activities of other sectoral agencies. A Basin Coordinating Committee of local government representatives along with the representatives of Agriculture and Public Works needs to be established with formal authority for project coordination. Appointment of a full time Committee Chairman/Project Coordinator, representing local government and acceptable to all jurisdictions would address the problem of joint leadership by multiple local government units, while strengthening capability for day-to-day coordination of project implementation.

While the Ministry of Agriculture will have primary responsibility for management of the Upper Watershed subproject, major agriculture sector inputs are required in the development of irrigation component of the project as well. The agriculture project manager will therefore be responsible not only for the upper watershed subproject but also serve as a project level agriculture sector representative for other project components.

II. Development of Irrigation Systems Program Management Concepts According to Loan Agreement

Organization for management of the special project assistance for irrigated rice production must take into account the need for involvement, in close coordination, of the agencies responsible for the operation and maintenance of the irrigation system and for providing essential agriculture support to the farmers in the irrigation service area. In the project area, these agencies are the District Irrigation Services and the District Agriculture Services. At the same time, the project includes activities which are beyond the scope of individual district resources and/or jurisdiction, and a basin project level organization with national agency representation is necessary.

The existing Citanduy Project Office under the Ministry of Public Works, Directorate General of Water Resources Development is expected to continue to have overall responsibility for basin wide water resources planning as well as implementation of water resources development activities requiring the capabilities of a national level organization. It would also appropriately continue to have a leading role in the coordination of intersectoral project development efforts.

The Ministry of Agriculture is also to establish a project level multi-disciplinary team which would have primary responsibility for the upper watershed development project and at the same time have basin level responsibility for management of the agriculture sector activity of the development of irrigation systems project.

The district government, under the Ministry of Home Affairs, is responsible for coordination of all development within its jurisdiction and will thus be in a position to coordinate the activities to be implemented by the district irrigation and agriculture services. At the same time, intersectoral coordination at the basin level will be strengthened by establishment of a coordinating committee chaired by local government representatives either jointly or by appointment of a single representative for all involved jurisdictions.

This complex organization and management structure is particularly important for the development of irrigation systems project because of the essential close link of the public works water resources and the agriculture sector activities. Efficient on-farm water management and effective water users associations, important objectives of the project, will require the close cooperation of the irrigation service and the agriculture service. This cooperation must extend to the national level in the allocation of resources for irrigation construction and maintenance, and for agriculture program inputs - seed, the BIMAS/INMAS program, and extension training and staff.

Comprehensive Basin Development Organization According to Loan Agreement

The development of irrigation systems project is itself one component of a comprehensive multisector development project for the Citanduy Basin. In addition to lowland irrigation activities, A.I.D. assistance will be provided for upper watershed development and improving local development planning and management capabilities, while the ADB will finance major new irrigation construction and rehabilitation of four existing systems in Central Java. A strong project management structure is essential for project success. Three ministries share major project implementation responsibilities -- Home Affairs, Public Works and Agriculture. The existing Public Works Project Office will continue to have major project responsibilities with additional large investments in irrigation construction planned. Home Affairs, through the local governments, has an essential role both in overall planning and management of development in the region and in expanding local participation in project sectoral development activity.

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While the Ministry of Agriculture will have primary responsibility for management of the Upper Watershed subproject, major agriculture sector inputs are required in the development of irrigation component of the project as well. The agriculture project manager will therefore be responsible not only for the upper watershed subproject but also serve as a project level agriculture sector representative for other project components.

III. Local Development Planning and Management Organization According to Loan Agreement

The Basin Coordinating Committee which will provide a link between the local governments and project-level sectoral agency representatives, will also provide a forum for coordination between the local jurisdictions for the local development planning and management project component. The Committee will be responsible for training plans, allocation of project funding for local initiative projects and approval of individual project proposals. The Committee will review and approve work plans of the Socio-Economic Research Unit which will also submit its reports to the Committee for review.

The Basin Master Plan was prepared under the auspices of the Ministry of Public Works Project Office and it is expected that Office will have primary responsibility for updating that Master Plan. The district planning boards and Ministry of Agriculture project level staff will also participate, with coordination by the Basin Committee.

Annex
Project Organization and Management

A. Background

The Citanduy II management structure was an attempt to plan and implement a variety of sectoral activities aimed at the cross-sectoral targets of preserving soil and water resources and increasing agricultural production. This effort was focused on a "watershed" geographic unit which, in the Citanduy Basin's case, involves five local government administrative units (kabupatens) and two regional ones (the provinces of Central and West Java). There is no formal mechanism for inter-province administration without deference to national-level government. The task was complicated by the fact that although planning, budgeting and implementation of many of the sectoral activities is administratively the responsibility of the kabupatens and provinces, responsibility for others lies with Ministries which have no administrative responsibility to kabupaten or province government.

To cope with the problem, a set of supra-institutional coordinating organizations was established. These were the Watershed Management Development Center (WMDC), the Citanduy Project Office (CPO), the Basin Coordinating Committee (BCC), the National Steering Committee (NSC), and the NSC Secretariat. final complication was introduced by the project's intention to increase institutional capabilities to continue the effort: supra-institutional organizations (project, not permanent entities) and nationally-based Ministerial ones were to transfer organizational and technical expertise to provincial and kabupaten governments. It appears the designers of Citanduy II also anticipated that a post-project ("phase-two") supra-institutional organization would be formed or continued in the Basin to carry some of the coordinating and technical burden into the future.

B. Progress to Date

1. Field Level

a. Watershed Management Development Center - The WMDC was to provide a multidisciplinary team of technical personnel for project management, watershed management, conservation, hydrology, mapping, survey, research (food crops, estate crops, livestock, fisheries), and nursery management under unified leadership with responsibility for upper watershed development activities and secondary responsibility for agriculture activity in the lowland irrigation development component.

The WMDC was formed and was attached to the existing Ministry of Forestry Regreening office (P3RPDAS/sub-balai, Citanduy-Cisanggarung). The majority of WMDC staff including top management are from P3RPDAS. At the beginning of the project, Forestry was a part, albeit independent-minded, of the Ministry of Agriculture. Early in the project, however, it was made a seperate Ministry. The WMDC thus lost its formal, though tenuous, link with Agriculture. AARD, Food Crop, and AAETR professionals have been seconded to the WMDC for purposes of the project but staffing bias to P3RPDAS combined with a heavy Regreening implementation schedule distinct from Citanduy II activities means the WMDC operates primarily as a Regreening office. For Citanduy II, the WMDC plans, monitors, and evaluates modified Regreening deviate to Citanduy II standards; plans, implements, monitors and evaluates Regreening nurseries (grass and tree) for model farms and expansion; surveys and proposes expansion areas to local government, conducts conservation research, cropping research, extension training, hydrologic/sedimentation micro-data, and Regreening itself.

Additional livestock, estates, fisheries, mapping and research personnel would be required for the WMDC to carry out its technical mandate as perceived in the Loan Agreement. Although a key member of the BCC, the WMDC itself reports only to the Ministry of Forestry and not to local government or to the BCC, CPO or NSC (seconded professionals report to their respective departments).

Citanduy Project Office - The CPO was tasked with basin-wide water resource planning, development and implementation of new construction, and rehabilitation of four (non-project) irrigation systems in Central Java. The Loan Agreement called on the CPO for coordination with Kabupaten irrigation sections in project irrigation systems' rehabilitation and O&M activities.

The CPO is the old Citanduy I project office, which is directly managed by the Directorate of Rivers within the Ministry of Public Works. Its attention has focused on the new construction and rehabilitation of 4 (non-project) irrigation systems in Central Java, while Citanduy II upper ten systems rehabilitation, O&M, and model block activities are primarily implemented by the kabupaten Agriculture Service and by the Kabupaten Irrigation Section (P.U.) with minor assistance from the CPO. Also a member of the BCC, the CPO reports directly to the national Directorate of Rivers, not to local authorities.

2. Basin Level

Basin Coordinating Committee - The BCC was to consist of representatives of local government and of the WMDC and CPO. It was to have formal authority and responsibility for project coordination. A full-time chairman/coordinator was to be appointed to represent local government who would be acceptable to sectoral agencies for facilitating project implementation.

The BCC was established, jointly-chaired by the chairmen of BAPPEDA I (provincial planning boards) of Central and West Java. Two "secretaries" were named: the heads of the WMDC and the CPO. Over 100 members represent province level offices for food crops, livestock, estates, fisheries, forestry, irrigation, public works, and health sciences from Central and West Java provinces as well as BAPPEDA II and dinas' from the five Basin kabupatens (Cilacap, Tasikmalaya, Ciamis, Kuningan, and Majalengka).

The BCC has not been active. It has met only four times with equivocal results. The participation of provincial level institutions inhibits kabupaten participation and the vast number of peripherally-related participants has hindered progress. WMDC and CPO participation is passive; they appear to feel the BCC is unproductive and does not understand technical issues of implementation. The BCC has no formal authority over either the WMDC or the CPO.

3. National Level

a. National Steering Committee - The NSC was not called for in the Loan Agreement but was discussed in the project paper as an organization to be set up by interministerial decree to provide central-level direction and coordination to the project. It was established and is chaired by the BAPPENAS bureau chief of agriculture and irrigation. It has representatives from Ministries for Environment (?), Public Works, Agriculture, Home Affairs and Finance. The project paper called for representation from West and Central Java provinces as well but this did not happen.

The NSC has not been active although its chairman has played a role especially since 1983 in attempting to monitor and improve project financial and implementation progress.

b. Secretariat of the National Steering Committee - A Secretariat was not called for in the Loan Agreement but was created by a letter of decree of DG Bangda to assist the NSC to monitor and coordinate. It receives funding support from AID for staff and facilities. It has twelve members, half of whom are active: from DG Bangda, Directorate of Rivers, Directorate of Soil Conservation and Land Rehabilitation (MOF), Bureau of Planning (MOA), and from AARTE (MOA). The Secretariat receives reports indirectly from the WMDC, CPO, and BAPPEDA's (province and kabupaten), but has little direct authority. Its members are too far from the project level and too burdened with other responsibilities to facilitate management effectively. The existence of an NSC and a Secretariat may have contributed to the BCC's reticence to assert itself.

C. Conclusions:

1. WMDC - Has provided a good core of multi-disciplinary technicians to carry out the planning and management of the upper watershed although more technicians are needed, primarily for watershed development planning, the upper watershed masterplan, and the Basin Master Plan. There is little link with the CPO or with lowland agricultural activities due, in part, to the divorce of Forestry and Agriculture Ministries.

The WMDC has not picked up the staff which would have permitted it to address the full range of disciplines involved in addressing complex upland farming systems (estate crops or livestock, for example). The use of Regreening funds as a major source for the counterpart budget has biased the WMDC toward the Regreening technical approach although PIRPDAS has taken initiatives in the past two years to be both more flexible technically and to explore limited increases in cooperation with local government.

2. Basin Coordinating Committee - The BCC has not worked and its failure may be one key to the management and organization problems of Citanduy II. As currently structured, is not at the basin level, has too many peripheral members, receives no input from WMDC, CPO, NSC, or the Secretariat, and has no real authority. Provincial BAPPEDA's in Central Java and West Java have tried to compensate on their own, but cannot provide direct leadership to the Basin from Bandung or Semarang. Their effort, nonetheless, along with greater direct leadership by kabupaten government is a positive development which should be encouraged further.

3. National Steering Committee - The NSC has not functioned effectively. It too is too remote. The chairman, in his capacity as BAPPENAS agriculture (forestry) and irrigation bureau chief, has been helpful. The AID-supported Secretariat has facilitated some national level policy direction and coordination.

Recommendations for the Basin Coordinating Committee:

1. must include representatives of Kabupaten BAPPEDA's, relevant Kabupaten dinas', and the WMDC: maximum 40 people;
2. should meet periodically (quarterly) at the WMDC;
3. should be chaired by representatives of BAPPEDAs of Central/West Java;
4. CPO and provincial dinas' should participate on an "as needed" basis only;
5. all project related budgets should be "compiled" and "collected" here for vetting and joint submission to central government and AID;
6. AID funds should be made available to provincial BAPPEDA's for BCC administration;
7. WMDC/CPO should not "report to" but would brief BCC at periodic meetings;
8. MSC Secretariat should meet quarterly with BCC for monitoring but not directing.

ANNEX
CITANDUY II ASSESSMENT
(June, 1985)

TABLE OF CONTENTS

UPPER WATERSHED DEVELOPMENT

Introduction According to the Loan Agreement

Serious problems of deforestation and soil erosion have received increasing attention by the Government of Indonesia since efforts to rehabilitate critical land, especially in the upper watershed began in 1962. Implementation was started on a national scale in 1967/1968 in several selected watersheds and in 1971 a pilot soil conservation project was established with checkdam construction to catch sediment as the main activity.

The Upper Solo Watershed Management and Upland Development project was implemented from 1973 to 1979. A soil conservation pilot project in the Ciliwung Subwatershed, partly financed by the World Bank, began in 1976. Also beginning in 1977 was another soil conservation pilot project, at Panawangan in the Citanduy Basin.

In the third Five Year Development Plan (1979/1980 - 1983/1984) the main national soil rehabilitation effort is through the INPRES program, with a target of about 300,000 ha. of reforestation and 700,000 afforestation per year. Included in the afforestation is construction of contour terraces and 200 checkdams. Reforestation in the watershed began in 1964.

The Panawangan Pilot Watershed was initiated in conjunction with an upper watershed management study financed by AID under the first phase Citanduy River Basin Development Project Loan. It involved the Citanduy Project Office of the Ministry of Public Works and project consultants, the Ciamis District government, and PJDAS.

The demonstrated success of the Solo and Panawangan pilot watershed projects has provided the technological and institutional framework for development and execution of a watershed development program which moves beyond pilot implementation into a sustained basin-wide program to increase upland agriculture and livestock production while simultaneously reducing soil erosion by application of improved conservation practices. The Citanduy Basin Upper Watershed project described below combines initial extension of the existing package of upland agriculture and conservation technology with an intensified effort to improve planning for development of the 290,000 ha. Citanduy upper watershed over the longer term.

OBJECTIVES According to the Loan Agreement

Broad objectives of the proposed Citanduy agricultural development program are to reduce damage and loss of productive capability due to soil erosion to the uplands and, at the same time, to increase agricultural production.

More specifically the upper watershed project objectives are to:

- develop and implement an integrated multi-disciplinary plan and approach for solving problems of the Citanduy watershed in a manner which maximizes the use of local government resources.
- make farmers aware of improved upland technology, and to convince them to adopt the total package of technology as appropriate to their specific situation.
- implement a successful basin-wide upper watershed production and conservation program that encourages acceptance of appropriate conservation and production technology through local participation -- including farmer contributions of labor -- and that provides for the long-term staged development of the upper watershed of the Citanduy Basin.

Agricultural Technical Package Component: General Description According to the Loan Agreement

While continuing the on-going reforestation and afforestation (greening) program to rehabilitate critical areas, the project involves the design, development and delivery of a package of upland conservation and production technology to approximately 20,000 farm families, on 10,000 ha. over a period of five years. The project is the first phase of an expanded program that will ultimately attempt to introduce modern conservation and upland production practices to all the farm families, estimated at 240,000, who make their living from the 290,000 ha. upper watershed of the Citanduy Basin. During the first phase, which should be viewed as a learning and transition phase prior to the intensive basin-wide dissemination of the package of technology, the upland package of technology would be perfected through extensive field research at five locations in the basin. A network of model farming demonstrations will be established and continuously maintained in farmers' fields throughout the basin.

Nurseries will be established at selected sites within the basin to produce and supply on a reliable basis the grass and trees required for adoption of the upland farming model. A credit system will be developed and tested to provide farmers the working capital needed to purchase the necessary component inputs of the package of technology, particularly livestock and crop inputs such as seed, fertilizer and pesticides. Under the project an extensive program of training will be developed for technicians and farmers in upland farming systems, conservation practices and community development. Finally, low grade, labor intensive feeder roads will be constructed to facilitate access to each of the model farming demonstrations and the hinterland surrounding each of the models.

To manage the project an integrated management structure will be created at the basin level, composed of personnel drawn from the various Directorate Generals and agencies of the MOA and local government. This integrated project management organization will be responsible for the design and implementation of the upper watershed project. This integrated agriculture office will also be responsible for management of agriculture sector activity in irrigated food production subproject and the preparation of an upper watershed master plan and program. This master plan and program would govern the basin-wide dissemination of the program during the second phase. The master plan will incorporate the results of the experimental research and demonstration work carried out during the first phase as well as utilize topographic, land suitability and socio-economic data to be developed with inputs made available during the first phase.