Nucleus Estates and Smallholders Projects in Indonesia

Indonesia’s program of Nucleus Estates and Smallholder (NES) development was designed to create productive employment at relatively low cost and raise the farm incomes of landless and near-landless families while increasing output and exports from important tree crops. The Bank supported the program through seven projects approved in quick succession in 1977-83. Of an expected cost of $1.3 billion for the seven, the Bank commitment was $655 million. The NES program took advantage of Indonesia’s increased oil revenues. Later, however, as these revenues dried up, the Government was to face serious problems in providing counterpart funds.

On the whole, Indonesia’s public sector NES strategy has not met its goals. A recent OED audit of three projects—NES IV, V, and VI—notes that a more gradual approach, on a smaller scale, might have left more sustainable benefits.* The projects overstretched the management capacity of the public sector estate companies that were responsible for implementation as well as for programs of their own. Money was also a problem. Most of the public sector estate companies lacked financial flexibility and were vulnerable to delays and reductions in the funds released for the projects from the government budget.

Nucleus estates

In the 1970s, the Government began using public sector nucleus estates as a means to further its broad policies of increasing rural incomes, resettling landless families on unused land, and increasing the production of rubber, oil palm, and coconut, which accounted for important shares of agricultural GDP and non-oil exports.

Suitable public sector estate companies, under the aegis of the Directorate General of Estates (DGE), were chosen to establish new estates on tracts of bushland and, on the Government’s behalf, manage and provide technical and financial services for the development of associated smallholdings. The estate companies received funds to clear land, build infrastructure and housing for settlers, provide employment, and establish and maintain the tree crops to maturity. Participants were to be employed as workers for the first three years after which, if judged suitable as settlers, they were to receive full title to their holdings. The new settlers were then to make individual credit agreements with Bank Rakyat Indonesia, which was to retain their land titles until loans were repaid.

The NES program was preceded by eight other treecrop development projects assisted by the Bank, and also involved seven more Bank-assisted projects for tree crops and one for sugar. Other approaches that the Government used to develop tree crops were a parallel private sector nucleus estate program, projects relying on Project Management Units (PMU) directly under the Directorate General of Estates, and transmigration projects.

Implementation

All the projects audited (detailed in box) took much longer to implement than planned. Delays in acquiring land slowed down planting. Smallholders already living in the project areas, especially in West Java, found little to attract them to the opportunities offered. Many settlers were not...

*See “Performance Audit Report, Indonesia: Nucleus Estates and Smallholders’ Projects IV, V and VI”, Report No. 11076, September 2, 1992. OED reports are available to Executive Directors and staff from the Internal Documents Unit and from Regional Information Centers.
adequately informed of project specifics. Often, the trees planted were of questionable quality or were inadequately fertilized. They grew poorly and their yields were low in the early harvesting years, signalling that their yields would never be as high as had been hoped. Foodcrop components largely failed in these projects (see box).

The Bank’s supervision reports repeatedly described all three projects as problematic. In a letter to the Government in 1987, the Bank described the “persistent systemic problems” with the NES program that it had identified during a tree-crop sector review in 1985, and made recommendations for addressing these problems. Closing dates of all three projects were extended, but such remedial actions as were taken did not much improve performance. Many of the appraisal targets for planted area were reduced. Coupled with cost savings due to devaluations of the rupiah, this resulted in cancellations of 40 percent of the loan amount for NES IV, 42 percent for NES V, and 67 percent for NES VI.

All three projects included the development of villages, housebuilding for settler families, upgrading of village roads, construction of processing facilities for oil palm, rubber, and coconut, and technical assistance to the Directorate General of Estates and to public estates, to improve management capabilities.

NES V and VI had so many components that they could qualify as eight distinct projects across Java, Bengkulu, Kalimantan, and Maluku islands. They involved seven estate companies in three coconut, four rubber, and two oil palm estate components and five coconut, two rubber, and three oil palm smallholder components, as well as a training component to strengthen the Estates Training Institute.

NES IV (effective 1980, closed 1988) made a good start, but by mid-1983 the estate company implementing it was in financial difficulty. Its agricultural products had become less profitable, due partly to the rupiah’s overvaluation, at the time, and the slow and inadequate release of Government funds for work completed forced it to borrow to prefinance many of its project activities. Problems included:

- Below-capacity intake of settlers.
- Delays in land titling.
- Overstretched management, reflected in deteriorating standards for land preparation, crop planting, and maintenance.
- Suboptimal fertilizer applications to smallholders’ mature oil palm areas.
- Inhibited development of the foodcrop areas.
- Below-capacity operation of the oil palm mill that had been built under NES I, due to design and operating problems.

NES V (effective 1981, closed 1990) also had a good start and a quick deterioration. Its widely scattered project sites made it a difficult project for the Bank to supervise. By 1983:

- In West Java, implementation was severely affected by competing claims to the land from existing occupants, who did not want to participate in the project.
- Coconut plantings were seen to be of poor quality; some hybrid seed nuts were inferior, others were planted in unsuitable areas, and fields received too little fertilizer. Planting in many areas was delayed by shortages of hybrid seed nuts.
- Some of the estate companies were in financial difficulty. As in NES IV, government budget allocations were often late and smaller than needed.
- Construction standards for access roads and settlers’ houses were poor.
- Poor prospects for cost recovery from participants.

NES VI (effective 1982, closed 1989), within a year had problems similar to those of its predecessors:

- Shortages of working capital for the estate companies, which had difficulty repaying debts they had incurred to fund the losses from unprofitable operations.
- Delayed release of government budgetary funds.
- Lack of funding and programs for upgrading substandard smallholder plantings.
- Delayed transfer of land titles and recovery of smallholder loans.

Production and yields

Data on outcomes are more reliable for some project crops and sites than for others. Data on oil palm production and yields are reliable because, for lack of alternative purchasers, smallholders sell all the fruit they harvest to the estate companies for processing. Production data for rubber and for much of the smallholder area under coconut are often unreliable.
Issues

Ambitious expectations, limited capacity

- Too much was attempted with rather limited institutional capacity. Because the NES program was implemented so fast, none of these rather complex projects has been able to build the kinds of institutional structures needed for long-term viability. A slower approach would have left more sustainable benefits.

The estate companies, in particular, had only limited capacity for promoting smallholder development. At project preparation, they lacked the managerial and financial resources to implement the projects effectively; implementation over-stretched them in both respects, especially as they were also participating in a parallel wholly Government-financed NES program.

- The later projects came too soon to benefit from the experience of the earlier ones. With longer intervals between Board presentation, lessons of experience could have been used to help strengthen the institutional structure of the DGE and the estate companies.

- The projects, especially NES V and VI, had too many components, some of which show signs of hasty and inadequate preparation. This overload, and the heavy emphasis that was put on attaining planting targets during implementation, adversely affected the quality of planting, reducing potential yields and affecting the project’s sustainability and cost recovery.

Land availability

- Land acquisition problems were a major concern in all three projects. The actual pattern of land holdings was often highly fragmented, instead of the contiguous blocks that had been envisaged at appraisal. Having the holdings so scattered increased the transport costs of produce, encouraged leakages of produce to private traders, increased administrative overheads and staff costs, and resulted in processing delays and poor quality of processed products.

Resources, incentives for estate companies

- The availability of funds to estate companies for smallholder development continued to be a problem in these three projects as it had in the first three. Most of the companies lacked the financial flexibility needed to prefinance smallholder development activities. Though in principle their financial needs for smallholder development were met from the Government budget through quarterly allocations, the allocations were often delayed and often covered less than the full development costs. The allocations were based on an annual budget while smallholder development activities were programmed on a multi-year basis. Some recent improvements in this arrangement are reported.

- The estate companies were not given adequate incentives to undertake smallholder development. The management fee they receive for this purpose (about 10 percent) is not nearly enough for them to fully commit themselves to the welfare of smallholders.

Financial costs, implementation delays

The commitment fees paid on the three loans were considerable, at $10.6 million. They reflect large and belated loan cancellations, disbursements much slower than scheduled in loan agreements, and delays in implementation. If the front-end fee of about $0.1 million for NES VI is added, these charges add up to more than 8 percent of the total disbursements on the three loans. These costs emphasize the risks in undertaking ambitious projects in quick succession; more might have been achieved, at less cost, through simpler projects that demanded less of their implementing agencies and emphasized the quality of investments rather than ambitious quantitative targets.

Oil palm: Production and yields were far below appraisal expectations—and in some cases far below PCR estimates, particularly in the most recent years. Since loan closing, standards of field maintenance have worsened; even where fertilizer has been available, few smallholders have been able to afford it or to obtain credit for it. The areas actually harvested are smaller than those reported at project completion.

Rubber: Production data for three project sites where data are relatively reliable show yields for the early years of tapping were well below SAR and even PCR expectations. Extrapolation of these data through the probable life of the stands implies output will be lower than expected over the remaining productive years.

Hybrid coconut: Production and yield data collected at the time of audit suggest that coconut has performed less well than oil palm and rubber in economic terms and in comparison with SAR expectations. This reflects the very
Food crop components

All settlers in these projects received plots of land for growing food crops as cash crops while waiting for their trees to mature, and to supplement their cash incomes in later years. These components failed in all seven projects. It is now clear that they were prepared without enough analysis of the feasibility of growing food crops at many of the settlement sites, especially in the outer islands. Such factors as adverse slope or inappropriate soils also helped to limit the success of the earlier Bank-assisted transmigration projects.

Neither was adequate analysis done to assess whether smallholder families would be willing or able to work on food crops when they were busy on their mature treecrop lots, once the development phase was over. Making the labor constraint worse was the fact that the foodcrop lots allocated were distant from the treecrop and house lots.

Smallholders' low expectations about the incomes to be derived from their lots have kept the conversion of land titles, and smallholders' assumption of loan liabilities—the first step to recovering project costs—painfully behind schedule. Land survey and registration procedures have compounded these delays. Thus far, land titles have been issued for only about 15 percent of the total area planted by smallholders, and only about 5 percent of the funds have been recovered. The delays have worsened the financial strains of the estate companies, which in turn pose a long-term burden on the government budget.

Economic returns, sustainability

The audit re-estimated economic rates of return (ERRs) using the same assumptions as those in the PCRs but with updated figures on crop production and area harvested, and found an even greater difference from the appraisal estimates than did the PCRs. Re-estimated rates of return for NES V and NES VI were at best 6 percent and barely above zero respectively. NES IV was re-estimated to have an ERR of 14 percent. The decline in yields and production since project completion has major implications for the sustainability of benefits and for cost recovery.

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Looking to the future

None of these rather complex projects has built the kinds of institutional structures needed for long-term viability. International markets for oil palm, rubber, and coconut are increasingly competitive and international prices are projected to continue declining. The Government expects to continue funding the maintenance of the land that is ultimately to be converted to smallholder ownership. But the outlook for recovering the development costs of these projects is very poor. The Government and the DGE should urgently review the deteriorating situation, and assess whether and how—where feasible—economic and financial viability can be restored. In some instances, correct fertilization and better field upkeep are a necessary first step; to achieve this, smallholders would need greater access to credit.

The NES approach has worked well elsewhere. In Indonesia's circumstances, however, its future role should be weighed against the alternatives: similarly packaged interventions managed by private companies, Project Management Unit schemes organized through DGE, or even non-packaged arrangements for input supply, technical assistance, and credit.

Editor's note: Audit reports make a point of recording differences of opinion, where these exist. The Country Department notes the data differences between the audit and completion reports on these projects. It agrees that the overall performance of NES V and VI was disappointing, but argues that without further field verification, the estimates of yield profiles that are given in the completion reports are probable and the performance of the projects thus likely to be more favorable than judged by the audit. (See the audit report, page 16, footnote 13.) It also argues that, for coconut, "there is ample evidence to show that hybrids outperform local cultivars, even under the conditions of mismanagement and abuse reported by the audit."

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