Preliminary Impact Assessment Report and Conclusions

Initial Project Results

A quick survey was conducted in the first part of 2006 to make an initial assessment of progress in the six project sites.

Four indicators guided the quantitative documentation of the project experience: yield, production cost, labor inputs, and product selling price.

While it is too early to assess the actual impact of the project, the results of the survey could serve as indicators of the potential effect of Sustainable Agriculture on farm income.

And the results have been encouraging, further bolstering AJPN's firm belief that Sustainable Agriculture practices can lead to increased income and bigger yields, contrary to popular belief.

With Sustainable Agriculture, Yield Increases Over Time

Selected crops in four project sites have shown significant increases in yield.

Rice, the staple food and the common crop among the project sites, responded favorably to natural farming technologies.

Rice yield per hectare increased significantly from 7–10 percent in three of the four project sites that promoted sustainable rice production.

This was largely due to the use of organic fertilizers and reduction in the use of chemicals for pest control.

In the case of Bukidnon, infestation caused a slight decrease in production, yet the harvest remained at par with conventional rice harvests in the area.

The other major crops in project sites in India, such as wheat, pea and tomato, also showed significant increases in yield.

The farmers attributed this performance, especially of pea and tomatoes, to the greater use of organic fertilizers and new seed varieties. Integrated pest management was another common practice in the pro-

Table 45. **Yield Per Hectare of Rice and other Crops Before and During the Project**

Crop	Yield Per Hectare *(kg)*		% Difference	Project Site
	Before the Project	During the Project		
Rice	6,124.60	6,591.18	7.08%	Parmalpur
	4,551.06	4,932.46	8.38%	Banjarnegara
	2,105.42	2,330.34	10.70%	Jogyakarta
	4,063.95	4,049.00	(0.37%)	Bukidnon
Wheat	3,115.57	3,470.44	10.23%	Parmalpur
Pigeon Pea	803.70	1,274.96	58.64%	Khamkalan
Tomato	14,822.22	20,034.13	35.16%	Khamkalan
Cassava	13,989.39	14,029.05	0.28%	Jogyakarta
Corn	3,122.73	4,131.48	32.30%	Jogyakarta
Lima Bean	825.00	858.33	4.04%	Jogyakarta

duction of these crops. Corn production in Jogjakarta registered a high increase in production, despite the 44 percent reduction in the use of chemical inputs.

Meanwhile, a slight increase in production was observed in cassava, to which smaller amounts of chemicals and more organic fertilizers were applied.

Lima beans, which were mostly produced in home gardens during the project, have become an additional source of income for households, given their much improved yields.

Overall, the shift to Sustainable Agriculture resulted in increased yields. Yields are expected to improve even further as soil fertility is progressively enhanced through the application of organic fertilizers.

Production Cost Increased Following the Shift to Sustainable Agriculture

The Project had hypothesized that production costs would be drastically reduced following the shift to Sustainable Agriculture. The Project, based on initial results, recorded the opposite effect.

Most of the project sites reported higher production costs during the project, except for Bukidnon (rice) and Jogyakarta (lima bean), which recorded lower production costs by 17 percent and 24 percent, respectively.

The other sites spent 4-30 percent more on production with the shift to Sustainable Agriculture.

Table 46. **Production Cost of Rice in Selected Sites Before and During the Project**

Project Site	Production Cost* per Hectare		% Difference
	Before the Project	During the Project	
Parmalpur	17,294.08	21,285.42	23.08%
Banjarnegara	2,465,788.46	2,916,288.46	18.27%
Jogjakarta	237,342.11	267,526.32	12.7%
Bukidnon	12,090.51	10,028.53	–17.05%

** in local currencies*

The increase in production cost was particularly attributed to the use of organic fertilizers. Specific reasons cited include:

- Most farmer beneficiaries are still learning how to make use of local resources, such as cow dung, as organic fertilizers. In the last cropping, most of them relied on organic fertilizers sourced outside the village, which cost more.
- Farmers who prepared their own organic fertilizers spent more as they had to pay people to collect local materials.
- Bigger volumes of organic fertilizer are required to meet the nutrient requirements of degraded farmlands.

These experiences revealed that it is probably not possible to reduce production costs immediately following the shift to Sustainable Agriculture.

However, a gradual decrease in costs is expected as the soil regains its fertility and thereafter requires less organic fertilizer.

In Bukidnon, for instance, where many of the beneficiaries had been engaged in sustainable rice farming for over three years, a significant decrease in production cost was already noticed.

It is also important to note that major increases in production costs were due to the labor-intensive nature of most non-chemical farming practices.

While this appeared as an added cost to farmers, it in turn benefited farm workers in the community in particular, and the local agricultural economy in general.

Except for rice production in Bukidnon, and tomato production in Khamkalan, which incurred lower costs, labor costs of the other crops went up 2-45 percent.

Organic Products can Command Higher Prices but Require Appropriate Marketing Strategies

While products of Sustainable Agriculture already command higher prices in most places, rural consumers, who are generally not fully aware of the benefits to be had from consuming them in lieu of chemically

grown food, are still not prepared to pay more for them.

Only three of the six project sites had made a deliberate attempt to market their products.

The marketing of muscovado sugar produced in Sultan Kudarat and of organic rice from Bukidnon, Philippines are the more notable examples of such efforts.

The other crops, which had also been produced without chemicals, had not been marketed as such and are currently priced no differently from conventional food items.

The experience of farmers in Sultan Kudarat showed that upgrading product quality and establishing better market linkages have a positive effect on price.

Initial investments in muscovado processing justified the price increase, and yielded a net return on investment of 15.3 percent.

Also, organizing the suppliers (millers/traders/farmers) and linking them with reliable buyers (NGOs/Foundations engaged in the marketing of non-chemically grown products) has stimulated demand for muscovado in the area.

Notes on Documenting Project Results

This initial assessment has been limited to quantifiable economic results. This does not suggest, however, a bias or indifference to other results.

In fact, in surveys conducted at various stages of the project, including pre- and post-implementation, the project had consistently tried to measure the impact on health, gender, social and community institutions, and the farm environment, among others.

The demand-driven approach to identifying interventions, which the Project had adopted, also helped ensure that all aspects

Table 47. **Labor Cost in the Production of Rice in Selected Sites Before and During the Project**

Project Site	Before the Project		During the Project		% Difference
	Labor Cost per Hectare*	% from Total Production Cost	Labor Cost per Hectare*	% from Total Production Cost	
Parmalpur	6, 000.00	34.69%	8,173.33	47.26%	36.22%
Banjarnegara	1,292,307.69	52.41%	1,723,076.92	59.08%	33.33%
Jogjakarta	154,117.65	64.93%	188,823.53	70.58%	22.52%
Bukidnon	7,601.23	62.67%	2,633.00	26.26%	–65.36%

** in local currencies*

Table 48. **Comparison of Processing Cost, Price and Income Per Unit of *Muscovado* in Sultan, Kudarat, Before and During the Project**

	Before the Project	During the Project	% Difference
Processing Cost	31,289.64	51,339.44	64.08
Volume	5,182.98	5,942.80	14.66
Processing Cost per Unit	6.04	8.64	43.10
Price/Unit	29.00	35.14	21.17
Income per Unit	22.96	26.50	15.41

regarded as important by the beneficiaries were covered by the project.

Unfortunately, the volume of information generated in the course of project implementation would have hampered any attempt to make a comprehensive account of project results.

The short duration of the project—less than two years—had also made it unnecessary to make such an attempt early on. It takes more than two years to measure the impact of an agricultural project.

Nonetheless, project surveys and interviews with beneficiaries had all indicated that there has been some progress towards agricultural resource conservation, enhancing social cohesion in the community, and improving the management capacities of beneficiaries.

At the same time, the project concedes that the method it has used to measure the economic benefit to beneficiaries needs to be made more scientifically rigorous.

Factors other than yield, cost of production and selling price come into play and determine the profitability of the effort.

For instance, the record indicates that in general, yields in all of the six project sites had increased following the shift to Sustainable Agriculture.

The results contradict earlier research, which indicates that farm productivity tends to dip in the transition period, rising progressively thereafter as soils recover from the overuse of chemicals.

There is a need therefore to determine which other factors, perhaps previously unaccounted for, had led to the unexpected rise in yield in the project sites.

A similar study is called for to find out why production costs in the project sites had increased following the transition to Sustainable Agriculture, rather than simply putting it down to the added labor requirements, even though previous studies have offered corroborating evidence to back up this observation.

Despite these limitations, the results lead to one conclusion: it is viable for farmers to shift to Sustainable Agriculture practice. Yes, there will be some major adjustments needed both in mindset and farming techniques to effect such a shift.

But the effort will be worth it as Sustainable Agriculture will not only eventually lead to higher yields and lower production costs, it will also bring in long-term benefits, such as environmental protection and community collaboration, that conventional agriculture will never be able to do.

Lessons and Challenges

Sustainable Agriculture as a Tool for Poverty Reduction

The project has demonstrated the potential of Sustainable Agriculture for raising farm productivity while keeping inputs to a minimum.

While labor costs had increased in many of the project sites, the case of Bukidnon, where farmers had been engaged in sustainable farming for some time, showed that labor costs could eventually be reduced as well.

On the other hand, the initial increase in labor requirements had proven to be beneficial to the communities as it created jobs for the many unemployed rural workers.

The premium prices for natural or organic products had also contributed significantly to increasing farm incomes.

But poverty constitutes not only material want but other forms and levels of impoverishment as well—psycho-social, gender, ecological among others.

Hence, while the project had given priority to the attainment of household food security—over increasing aggregate food supply, for instance—because it regards food security in the home as indispensable to poverty alleviation, it had also sought to encourage farmers to make their own decisions.

Conventional, or chemical, agriculture may have raised farm productivity to impressive levels, giving farmers more disposable income in the process.

However, by prescribing a strict regimen for things like which varieties to grow, how to control pest infestation, among others, conventional agriculture had also stripped farmers of the right—and the need—to make decisions for themselves.

This form of dependency has impoverished farmers socially and psychologically.

Sustainable agriculture in general has the potential to halt and reverse this pattern of psycho-social impoverishment.

Aside from seeking to tailor the type of crops and farming systems to the agro-climatic conditions in the area, Sustainable Agriculture also takes into consideration the socio-economic conditions of the farmers.

Within the project, in particular, it was emphasized that while yield or productivity is an important gauge of performance, other indicators of performance were also emphasized, such as resilience to external shocks, access to markets, and enhancement of technical capacity.

Farmers' participation is central in all these processes as it enhanced the farmers' sense of ownership of the project, and has improved the chances of it being sustained beyond the project life.

On the other hand, while Sustainable Agriculture requires less external input, it requires time to enhance farmers' capacities. It is knowledge intensive.

Investments would have to be made in training extension workers, in incorporating Sustainable Agriculture in academic curricula and in allocating budget for researches.

Engaging the Market

The increasing demand for organic products favors the mainstreaming of Sustainable Agriculture.

However, engaging the market imposes strict requirements on producers, specifically in terms of volume, reliability of supply, consistency in product quality, and packaging.

This presents a major challenge to small and marginal farmers who cultivate small parcels and produce little surplus. They need to consolidate their products and reduce transaction costs to be able to compete in the market.

A number of challenges and limitations which have bedeviled other attempts to market organic products had confounded project efforts to build market linkages as well.

Some of these are:

1. **Lack of needed financing.**
   As producer/farmers groups get ready to market their products, they will need financial assistance. Much of the currently available financing for agriculture is earmarked for production. Farmers looking to market their products would be focusing on product processing and promotion, rather than production.

2. **Lack of clear and enforceable certification standards.**
   While there have been notable attempts by governments to establish formal certification standards and systems, these have not been implemented quickly or broadly enough. The proliferation of products falsely labeled as "organic" tends to crowd out new, legitimate entrants into the organic food business.

3. **Lack of a marketing system tailored to support Sustainable Agriculture.**
   The infrastructure that supports the trade in and marketing of agricultural produce was and still is tailored to the requirements of conventional, chemically grown products. A new system, one which takes account of the unique processing, storage, and even packaging needs of organic producers, must be established.

Sharing the Benefits of Sustainable Agriculture

In the 2005 UN Human Development Report, it has been stressed that extreme inequality is a break on progress towards the Millennium Development Goals.

It argues that economic growth alone will be insufficient to enable most countries to achieve the goal of halving poverty by 2015.

Thus, equal emphasis should be given to creating conditions under which the rural poor can increase their share of benefits from greater farm productivity.

One approach that had been initiated by the project is to strengthen local development planning, specifically through the formulation of master plans for organic products that have significant potential in local and export markets.

As many governments in Asia have started to devolve agricultural functions to local government units (LGUs), this initiative provides an opportunity for more participatory agricultural development and hopefully more equitable sharing of the benefits.

Under such master plans, the LGU could facilitate the consolidation of organic products from small farmers by setting up a common framework and program for participation by the various stakeholders in the locality.

These master plans can also be the basis for formulating business plans which the private sector can jointly implement.

Another approach being implemented by other NGOs is the "industry approach", which consists of organizing and linking emerging rural enterprises in the value chain of production, post harvest processing and marketing.

Consolidating their products would help the farmers attain economies of scale, while linking their products in the value chain would enhance their competitiveness in the market.

The key strategy in both approaches is to increase farmers' productivity and competitiveness while strengthening their bargaining ability to ensure that they get their rightful share.

Both approaches also promote better coordination among participating stakeholders, avoid duplication of efforts, and would hopefully promote greater efficiency in transactions.

As such, they result in greater competitiveness, not only for individual stakeholders but also for the sector or the community as a whole.

Just as importantly, these approaches enhance transparency and facilitate better information management. Thus, they help ensure that the benefits are fairly distributed among the stakeholders.

Challenges and Action Points

The project has identified the following challenges to more widespread adoption of Sustainable Agriculture:

1. There is a need to refine the principles and methods of Sustainable Agricul-

ture according to a framework for poverty alleviation.

2. Social and behavioral changes within a community that has adopted Sustainable Agriculture must be documented. Empirical measures of its impact on rural households (e.g., whether more of them are able to send their children to school or to procure medical care) must also be conducted to strengthen the case for Sustainable Agriculture as a poverty alleviating strategy. Sustainable agriculture impacts not on the farm environment but on the whole community. It is, in fact, a community's life-support system.

3. Agricultural extension workers, as well as NGOs, need to be "retooled" to better promote the adoption and practice of Sustainable Agriculture.

4. There is a need to develop a curriculum for Sustainable Agriculture, and to keep updating such with other "knowledge products" as they are developed. A concerted effort must be made to integrate this curriculum into agricultural courses. Libraries should be provided with more materials on Sustainable Agriculture.

5. Approaches to scale up Sustainable Agriculture operations must be explored. The example of how China had been able to put millions of hectares under organic rice production has shown that scaling up Sustainable Agriculture is not a matter of technology, but of approach.

6. More resources must be mobilized in support of Sustainable Agriculture research. Development agencies and governments must be persuaded to augment their investments in Sustainable Agriculture.