

From Rags to Riches

The Story of Coconut Palm Sugar Farmers

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GLOSSARY

ASPPUK	<i>Asosiasi Pendamping Perempuan Usaha Kecil/Association of Women in Small Business Assistance</i>
Banglimascakeb	<i>Banjarnegara Purbalingga Banyumas Cilacap Kebumen/name of 5 neighboring districts producer of coconut palm sugar in the southern coast of Central Java</i>
Bappeda	<i>Badan Perencanaan Pembangunan Daerah/Regional Development Planning Office</i>
BI	<i>Bank Indonesia/Central Bank of Indonesia</i>
BRI	<i>Bank Rakyat Indonesia/Indonesian People Bank</i>
BTF	Big Tree Farm
CPU	Central Processing Unit
CU	Control Union
CUC	Control Union Certification
Deperindag	<i>Departemen Perindustrian dan perdagangan/Industry and Commerce Office</i>
Dinkop	<i>Dinas Koperasi /Cooperative District Office</i>
Dinpertanbun	<i>Dinas Pertanian dan Perkebunan/Office of Agriculture and Plantation</i>
ECHO	European Commission's Humanitarian Aid and Civil Protection department
EU	European Union
FO	Field Officer
GAP	Good Agricultural Practice
HACCP	Hazard Analysis and Critical Control Point
ICS	Internal Control System
JAS	Japan Agricultural Standard
Jatirogo	<i>Jaringan Petani Kulonprogo/Kulonprogo Farmer Association</i>
KSU	Koperasi Serba Usaha/ Multi-Business Cooperative
Lesman	<i>Lestari Tani Mandiri/Independent Sustainable Farm – Java based NGO focus on farmers/agricultural strengthening</i>
LPPSLH	<i>Lembaga Penelitian dan Pengembangan Sumberdaya dan Lingkungan Hidup/ Institution or Research and Development of Natural Resources and Environment</i>
KemMenkop/UKM	<i>Kementerian Koperasi dan Usaha Kecil Mikro/Ministry of Cooperatives and Small Micro Enterprises</i>
Manggar	Coconut tree florets that produced liquid syrup for coconut cast or crystal sugar
NGO	Non-Government Organization
Nira	Liquid syrup produced from coconut florets – a sweet sap for sugar or fermented liquor
NOP-USDA	National Organic Program – United States Department of Agriculture
OVOP	One Village One Product
P3R	<i>Pusat Pengembangan Produk Rakyat – Center of Community Product Development</i>
QMS	Quality Management System
RT	<i>Rumah Tangga/ Neighborhood Association</i>
SDC	Swiss Development Contact – Switzerland NGO
VECO	<i>Vredeseilanden Country Office Indonesia / Belgian International NGO in Indonesia</i>

From Rags to Riches

THE STORY OF COCONUT PALM SUGAR FARMERS

(IMPACT ANALYSIS OF HIVOS – ROSEA SUPPORT PROGRAM)

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EXECUTIVE SUMMARY

Hivos regional office South East Asia (Hivos ROSEA) has since 2008 supported the partnership program with local NGO/CBO in the strengthening of the coconut palm sugar farmers in Banyumas, Central Java and Kulonprogo, Yogyakarta. Using the value chain approach as the main strategy Hivos provided support to LPPSLH and Lesman/KSU Jatirogo to facilitate the implementation of Internal Control System and quality management system for organic certification of coconut palm sugar, particularly in the production of crystal sugar for international market.

With the allocation of fund at around € **321,518**, in which 2/3 of them used for direct support to strengthen farmers' capacity in producing organic certified coconut palm sugar Hivos has successfully helped more than 5000 farmers improving their living condition, social and economic status. The sweet sap (*nira*) from the coconut florets (*manggar*) has changed the farmers live and bring them from the brink of poverty live in rags to live in privilege as the riches.

Impacts of the programs as implied by changes in all level of the value chain are as follows:

a. Impact on the farmer level

Farmers' involvement in the organic certification program of coconut sugar has brought significant impacts to farmers' lives, namely:

1. Increased household income from coconut sugar with added value of the coconut sugar they produced (20 – 50%); this is partly due to the increased bargaining power of farmers against market (buyer/collector/middlemen);
2. Improved the agricultural practices concerning the coconut sugar production – such as maintenance of the coconut tree, reduced pesticide and chemical fertilizer use, crop diversification to grow under the shade of the coconut tree and give additional earning to the households;
3. Enhanced social status of the coconut sugar farmers from rags to riches: better income boosts farmers' confidence to take part in the social activities and enable them to contribute to the village affairs hence increased their social standing the village community.
4. Improved the living condition of the farmers' household with cleaner kitchen/production processes, better housing and better health condition;
5. Enhanced farmer knowledge and skills in producing organic crystal sugar thereby enabling them to serve as trainer/facilitator for other farmers outside of cooperatives/farmer groups or even outside of their area of residences;

b. Impact on the organization level

Organic coconut sugar program has provided the significantly positive impact to the farmer organizations in various ways:

1. Strengthened farmer groups in the supply chain side with the establishment of cooperatives (KSUs), ICS team, and CPU/warehouse;
2. Improved organizational management capacity of all elements of the organizations – more cohesive farmer groups, open and transparent management of cooperatives, clear division of roles between actors involved in the organization, etc.

3. Increased youth involvement in organic coconut sugar value chain; young people shows greater enthusiasm to take part in the industry following the steps of their tapper parents. More young men and women are involved in the organizations as cooperatives staff, ICS cadres and ICS officers; also in marketing as middlemen/collector or quality assurance officer.

c. Impact on the product quality

On the product side of the value chain the program has clearly created a tremendously positive impact that could last and sustained in the long run, as follows:

1. The quality of coconut crystal sugar produced in majority target areas has met the organic standard set by the international organic certification body;
2. The improved quality of crystal sugar has driven farmers to also produce the quality cast sugar sought after by the local/national market for big industry such as soybean sauce producer – Indofood and Wings; although due to the limited availability of organic cast sugar such industry still willing to accept non-organic produces.
3. The use of organic standard in the coconut palm sugar tree has also improved the agricultural practices for other food crops, particularly rice and vegetable, thereby creating the new organic agribusiness industry that could increase farmers' income;
4. The adoption and implementation of ICS has inspired farmers and other actors in the coconut sugar industry in other area to also adopt similar practices albeit without certification, hence replicates the process without financial investment from the program;

d. Impact on the market

The coconut sugar certification program has also changes the market dynamic in the value chain as follows:

1. Creating the new market opportunities for farmers to trade their produces that is not limited to the hamlet or village level middlemen;
2. Open opportunities for farmers to shift as middlemen/collector and serve as mediator between farmers and bigger market in the national level or with international buyer;
3. The good price of organic crystal coconut sugar increases the price of the cast sugar sold in the traditional market and gives better quality product that meet safety and health standard for food consumption;
4. It drives buyer to gradually apply similar standard for other type of sugar needed in the food industry to the point where the multinational food and beverage and household appliances company expressed interest to try out the application of organic certification in their supply chain for soybean sauce; this interest somehow still need to be pursued further for actual implementation.
5. The production of organic sugar has created higher demand in the market that cannot be fulfilled by the farmers involved in the project hence encouraged middlemen and some of cooperative members to expand the ICS in several other districts producing coconut sugar. In many cases buyers are willing to buy the organic products even without international or national certificate.
6. Creating the new businesses for farmers and local traders to engage in the supply of supporting materials for crystal coconut sugar processing. For example, a few farmers turn from producing sugar to trader for "laru" (mangostene skin and lime for coagulant), fire wood, saw-dust, 'pongkor', and necessary equipment for processing, including as well transportation to deliver crystal sugar to CPU/KSUs.

7. Encouraged farmers to diversify the coconut sugar product in order to reach the local market, which reduced the risk of market saturation in the international level, and allow farmers that have produced organic sugar to sell in the local market without requirement for international certification.

e. Impact on partner organization

The program deals with two core partners that characteristically different in nature, in which one is the organization established by relatively young intellectuals with social interest and high education background, and another one is community base organization established by farmers with lower education. As such the program has created a slightly different impact towards the growth of the organization in Kulonprogo and Banyumas.

In Kulonprogo, while in the beginning the partnership was established between HIVOS and local NGO once the cooperative established the support was provided directly to this farmer organization or community base organization (CBO). In Banyumas the partnership is built with local NGO directly from the beginning, who then facilitates the establishment and strengthening of the farmer cooperatives. In general however the program has created relatively similar impacts toward the condition of the partner organization, namely:

1. The growing business of organic coconut palm sugar has driven cooperative to take professional measures in managing their business and relations to the market (national or international). Even when the engagement in bigger market caused the split of membership for example, it does not stop cooperative to continue the operation; and perceived such fraction as creation of new market opportunities and capacity of farmers to take the new position as buyer. In another word the program has matured the cooperative and makes it resilient to organizational dynamic that might destroy the cohesiveness of relationship between farmers and KSU;
2. Professional management is in place that ensures there is a clear division of roles and responsibilities between all related stakeholders. For example, between cooperative management and Paguyuban leaders in Kulonprogo, or between cooperatives, LPPSLH and P3R in Banyumas.
3. The cooperative has gained more confidence in running its operation and remains true to its nature to put members first. This is proven with example from Kulonprogo in which KSU Jatirogo decided to engage only with buyer that is willing to provide long-term contract and include tax in their price; although as a consequence the trading has been halted when buyer decided to hold the shipment due to some issues in the country of destination; In yet another example, cooperative in Banyumas (KSU Nira Satria) with member approval decided to sell their products not exclusive to P3R as previously designed but also to other buyers of their choice.
4. The recognition of LPPSLH as an institution that has strong expertise in the promotion of organic coconut sugar, which is proven with government request to facilitate the implementation of organic certification in two neighboring districts in Banglimascakeb with funding from APBD (district government budget);
5. The role of FO is no longer as field facilitator that provide training and conduct field inspection directly to farmers but has shifted into more technical assistance role. Farmers have taken over the role as ICS field inspector and training facilitator in majority places;
6. The program has enabled LPPSLH to generate organizational income with increased value of organic coconut sugar being traded via P3R; as per agreed clauses within the organization operating procedures P3R set aside 20% of its dividend to LPPSLH foundation annually.

7. P3R, which is originally established to market products from LPPSLH target farmers have fully operational as the limited trading company purchasing coconut palm sugar from other groups as well and has expanded its market from only one to more than 6 buyers;
8. More farmers are interested to join the cooperatives or work together as a group in producing the coconut sugar thereby increasing their bargaining power against oppressive middlemen and external market.

f. Relations with government – policy and regulations

The coconut palm sugar certification has a tremendous impact on government policy in developing local economy. Following are the changing condition that will support the growth of organic coconut sugar in the future:

1. Recognition of coconut palm sugar as essential commodity for generating local revenue, which is proven with allocation of budget for expansion and promotion of organic sugar; fund for certification from local budget in impact location (Cilacap District);
2. Increased support from government to the development of coconut sugar cooperatives:
 - a. financial support from Bank of Indonesia in Kulonprogo for building the warehouse cost more than Rp. 400 millions,
 - b. support from *Dinkop/Dinas Koperasi* (Cooperative District Office) in Banyumas to build the warehouse
 - c. support to build healthy kitchen and energy-saving stoves from Dinas Koperasi
 - d. support for processing units (oven for drying sugar, sieve, tray, etc.) from *Dinas Perindustrian dan Perdagangan* (Office of Industry and Commerce);
 - e. provision of insurance coverage from local government for coconut sugar tappers;
3. Support for connecting coconut sugar producers with market: invitation to present the products in the trade conventions/promotion arena in the local, national/regional and international fora;
4. Provision of technical assistance in the renewal of organic certification and replication to other districts;
5. Assistance in maintenance of coconut palm trees through regeneration – providing free seedlings for improved variety of coconut tree that could grow faster, shorter and produce more florets with higher content of coconut sap (nira);

g. Impact on value-chain of coconut palm sugar overall

The program has undoubtedly creates the positive impact in the overall value chain of coconut sugar. The most promising aspect of the program is the fact that there seems to be two different models come out as a result of the intervention strategy.

The first model is the intervention addressed directly to the beneficiaries, using the farmer cooperatives as the main partner and agent of change (see **Figure 5**). In this model, a relation between producer and market is more direct and transparent, in which farmers could market their product without another layer of intermediary. The traditional chain is still maintained but revitalized to be aligned with the development purpose of the cooperative; in this case the role of middlemen, while it is still exist in all level, it has been upgraded in the sub-district level to be an integral part of the cooperative as CPU (central processing unit). The responsibility to develop the program and build the capacity of farmers to adopt the ICS and as well as controlling the application

of organic standard rest solely with cooperative and Farmer Association without intervention from the third party or NGOs;

The second model, the intervention is led by NGO partner (see **Figure 6.**), which serve as the provider of the seed capital for production, technical assistance to improve knowledge and skill in the production and facilitates the adherence to organic standard by activating the ICS team; NGO also facilitates the access to market through the establishment of business unit that connects producers with market. The advantage of using this model is the program implemented in more structured and systematic way, clear division of roles and responsibilities thereby allowing for more speedy expansion and growth of farmers organization in the village level.

h. Impact on women and gender relations

The program has no significant impact in term of job division within the coconut sugar industry; however, it does provide more opportunities to women to take the new roles other than those assigned traditionally in the value chain.

Ways forward – lesson learned from the program to ensure sustainability, replicability and scaling up

Notwithstanding the success in changing people lives in the coconut palm sugar industry it is important to consider as well various issues that could help in ensuring the sustainability and growth of this industry in the long run. These issues are necessary to ascertain the replication and scaling up of organic certification on the coconut palm sugar as envisioned by the program. The key issues include, among others:

1. *The importance of promoting good business sense and marketing strategy* that will help producers to have a comparative advantage in competitive market: Market demand is clearly the main denominator in driving farmers' commitment to engage in the production of organic coconut sugar hence it is important to prepare farmers/cooperatives to compete in the open market; further capacity development in business management and marketing is crucial to ensure farmers' readiness in entering the wider market;
2. *Strengthen the small producers' capacity to influence market and trading side of the coconut sugar value chain*: it is important to unite farmers/producers for strengthening their bargaining position against market. This could be done among others through the formation of The Association of Coconut Palm Sugar Producers, which will bring all farmers/producers in this industry together to deal with the production and market aspects of the coconut sugar.
3. *Consumer education for mainstreaming the benefit of organic coconut palm sugar for building the national market*: this is the next step to ensure continuity of the industry and commitment to organic standard; instead of promoting 'organic certification' it will be more strategic to promote 'healthy sugar' as it will be aligned with increased awareness amongst community at large on the importance of adopting healthier life style. Hence public campaign should be encouraged to promote the benefit of using coconut palm sugar creating higher demand in the local and national market for organic sugar although not necessarily internationally certified.
4. *Policy advocacy for the issuance of government regulations or programs to support the adoption and implementation of internal control system in a wider coconut palm sugar industry*; this should address government in the local, provincial and national level. For the industry to grow and expand it is undoubtedly important to ensure that government adopts the approach and practices with the issuance of policies and regulations conducive to the coconut sugar value chain. The program has attracted government interest to allocate fund and provides various in kind support; however, more deliberate effort has to be implemented to ensure that such support more strategic and integrated into the development agenda instead of sporadic in nature.

5. *Promotion of value chain models on coconut palm sugar industry:* The two different model of value chain could be introduced as alternative approaches not only in coconut palm sugar but also other agricultural commodities. Nevertheless, it is important to document all processes and identifies various factors that need to be adjusted to make such model more applicable and adaptable in different context. Feasibility studies and initial assessment on the local condition is prerequisite to the selection of appropriate model to be used. The choice of working directly with community base organization (CBO) or through local NGO has to be based on this insight;
6. *Improvement of data management/knowledge management and information system:* Should the program to be replicated or scaled up it is important to always have a baseline data as the starting point to measure whether changes did happened within the value chain due to intervention from external actors or partly due to internal drive from within communities. This lack of baseline data has been one of the factors that the impact study found it difficult to come up with un-bias and more objective assessment of the outcomes. Besides poor knowledge management and information system make it challenging for outsiders to learn the best practices that HIVOS has acquired through its development support.
7. *Building relationship with the private sectors:* food and beverage industry is growing nationally and could be a potential market for coconut palm sugar. Until now most of F&B industry in country apply a very loose standard on the raw materials for their production due to the low standard of consumer demands and no strict requirement to follow health and safety criteria as required in the global market. Consumers have limited knowledge on the safety and nutritious facts of the food being consumed from such industry; however, with the raising awareness amongst consumers and government it is important to ensure that the big industry adopt a higher standard in their production. The use of cast coconut sugar has been essential in soybean sauce industry and for decades farmers via contract with middlemen have sold the product regardless the quality at the price
8. *The importance of having strategic and efficient management system in place:* The success of any program often depends partly on the management aspect and human resources capacity to deliver. While HIVOS has assigned a qualified personnel to manage the program lack of clarity on job division and internal control system has somewhat affected the ability to address the programmatic issues and cause strong reliance on external consultant for program quality assurance. Staff has been overload and overburden with not only responsibility to attend to the substantive issues of the program but also has to manage its financial and administrative aspect. It is important to apply internal control system within an organization instead of only imposing such standard to partner institutions. The clarity of job division and responsibilities will ensure the higher quality of program delivery and proper administration of the knowledge and information obtained from the interventions.

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FROM RAGS TO RICHES

THE STORY OF COCONUT PALM SUGAR FARMERS



Figure 1 Samsul Arifin, Manager KSU Nira Perwira

I am proud to come from “Penderes” (coconut palm tapper) family and my dream is to make this cooperative as the central cooperative for all coconut palm sugar producers in Purbalingga District (Samsul Arifin, 20, Manager of Nira Perwira Cooperative, Candinata Village, Purbalingga District, Central Java)

1. Introduction/The Beginning

Samsul is only one of many young people currently involved the coconut palm sugar production that has organic certificate. He and 5000 other farmers in Purbalingga, Banjarnegara, Banyumas, Cilacap, and Kebumen Districts in Central Java, and in Kulonprogo Yogyakarta, are those who benefit from the coconut palm sugar program supported by Hivos Regional Office of Southeast Asia (Hivos ROSEA). The program that has started in 2008 aimed at improving the lives of the poor small producers of coconut palm sugar using the value-chain for development model and implemented in collaboration with local organizations in the target location.

Prior to the program the profession of “penderes” (coconut sap tapper) is very much considered as the lowest position in both agricultural and village community. This is mainly due to the fact that most of ‘penderes’ have no land and have to rent the coconut palm from those who are better off and own the coconut trees. The tapping of coconut sap is a dangerous occupation as farmers have to climb the relatively high tree without any safety equipment in odd hour of early morning or late afternoon. One slip could cost them severe disability or even worse, live. Such dangerous profession however does not provide sufficient earning to the tappers.

The price of the processed produces in the farmers’ level is extremely low; the reason being that the quality of the produces is often low and the price is often set on the lowest level due to the inability of farmers to negotiate with the middlemen who play a very significant role in their lives. Coconut palm farmers have almost always fallen into the trap of poverty cycle and depended on the middlemen (pengepul – Ind.) for all production facilities and market price for their products. In most areas where coconut sugar produced the farmers usually have other works as well as source for their income, particularly when they have no farmland to cultivate or if they do coconut sugar production is considered as the side job to add households earning from farming activities. Due to the limited financial resources poor landless farmers are usually able only to produce low-quality sugar in form of cast sugar; and process the coconut palm sap in often a non-hygienic environment using chemical coagulant and tons of fuel-wood to cook the sugar. The farmers could only sell the product via the

middle-men who often have already put down payment for the final produces in form of capital or other necessities required by farmers' family. Hence the price in the farmers' level is decided by middlemen, usually very low and cannot cover the household needs. Farmers have no bargaining capacity nor sufficient skill and knowledge to increase the quality of their product. They also have no access to market information; therefore, they could only follow the middlemen dictate in setting the price of their products. The earning is so low that often left them with nothing for the next batch of production force them to again borrow capital from the middlemen thereby continue the vicious cycle of imbalance relationship between farmers and middlemen.

HIVOS ROSEA (Regional Office of South-East Asia), through its program on Access to Opportunities: sub-program Sustainable Production (SP) aims at increasing market access for quality produce of organized small-scale producers¹, has decided to support the coconut palm sugar farmers in partnership with several local organizations in Java. Aligned with its program to improve agricultural practices and enhance value chain HIVOS provided financial support for organic coconut palm crystal sugar to two partners, KSU Jatirogo in Kulonprogo District, Yogyakarta, and LPPSLH in Purwokerto, Central Java. The project started in 2008 although both partners have been involved in supporting the coconut palm sugar producers since late 1990s.

This impact assessment aims at determining the changes happened in the lives of the small producers of coconut palm sugar as a result of the achievement of the intended outcomes of the supported program. It will look at the changes in the economic, social and environmental aspect of the targeted communities and whether there are inter-relations between chain and in the model of change that could be attributed to the HIVOS intervention. In short it will look at factors contributing to the changes of lives in young people like Samsul and all 'penderes' families and what could be learned from the program that will likely be replicated or adopted by other stakeholders outside of the program area.

2. Who are the partners – key agent of changes

2.1. Organization profile – KSU Jatirogo, Kulonprogo District, Yogyakarta Province

KSU (Koperasi Serba Usaha – Multi-businesses Cooperative) Jatirogo (Jaringan Petani Kulonprogo – Kulonprogo Farmers Association) in Kulonprogo District, Yogyakarta, is a farmer cooperative set up by the members of a farmer group in Kulonprogo – Paguyuban Petani Jatirogo (Kulonprogo Farmers Association) – in 26 November 2008. This association was initiated in 1999 under the facilitation of local NGO, Lesman, as an effort to organize farmers in advocating food sovereignty by going back to natural farming aka organic farming using local variety of crops. This movement is organized as collective advocacy works involving farmers' association in several districts around Merapi and Menoreh Mountains. The Paguyuban has 4 programs: 1) economic development; 2) agribusiness; 3) network development; and 4) advocacy. The decision to establish the cooperative is part of the economic development program, in which Paguyuban aimed at helping farmers to improve their economic condition with the promotion of higher economic value products. Lesman as the main facilitator behind Paguyuban and has supported the promotion of organic farming with ECHO (via HIVOS) and VECO funding continue to provide technical assistance to Paguyuban then later to KSU Jatirogo in the identification of the more profitable organic produces in the area. Originally focus on rice and vegetables the group through the KSU Jatirogo decided to focus more on coconut palm

¹ Annual Plan HIVOS ROSEA 2009

sugar starting in 2005/2006 following the scoping study conducted by consultants from SwissContact under commission of Lesman with support from HIVOS. The coconut palm sugar was selected to be a priority commodity for organic produce that Jatirogo advocates since it is considered to have a higher economic value in the long run compared to rice and other food crops, especially in the international market. During this period Lesman received organic certificate for coconut palm sugar land and processing (2007) that allowed them to work with farmers to introduce internal control system for product improvement to meet the organic standard issued by Control Union (CU), Netherlands base organic certification institutions. Lesman provided training to KSU Jatirogo in the following area: 1) ICS (Internal control system) for organic produces; 2) HACCP for food safety (Hazard Analysis and Critical Control Point); and 3) market value chain for coconut sugar.

Legalized with Bupati Kulon Progo decree No. 24/BH/XV.3/V/2008 in 3 December 2008 KSU Jatirogo aims at certifying organic farming and marketing organic raw as well as processed produces, in particular organic palm sugar, thereby ensuring improvement of welfare and livelihood of coconut palm sugar farmers in Kulon Progo area.

KSU Jatirogo intend to increase bargaining power of poor coconut palm sugar producers in determining the quality, type and price of their produces. It is expected that KSU Jatirogo through its members will bring economic changes in the community level thereby improve the livelihood of the

sugar farmers in particular, and Kulonprogo community in general including also the cooperative personnel. The cooperative produces organic palm sugar in form of cast sugar and granule (crystal) sugar (gula semut - Ind.) The organic sugar is derived from “nira” - coconut palm sap - harvested from coconut tree in the land cultivated by ICS members of KSU Jatirogo.



Figure 2. Theresia Eko Setiawati , Manager KSU Jatirogo with her staff

Having initially received the handover of the organic certificate from Lesman in 2008/2009 in which the certification cost funded by HIVOS, KSU Jatirogo has since 2014 finance the certification cost independently and is currently a certificate holder for 3 (three) international organic standard certificates, namely: 1) Organic Standard EU- regulation for European market; 2) Organic certificate NOP-USDA for American market; and 3) Organic certificate JAS for Japan market – all these certificates issued by certification organization Control Union Certification (CUC) – organic product certification institution from The Netherlands based in Jakarta. The certification cost is fully paid by KSU since 2011. KSU Jatirogo was also included in the government program OVOP (One Village One Product) in 2010 that ascertain the role of cooperative as facilitator for the promotion of crystal coconut sugar in Kulonprogo District, which is destined as the main coconut sugar producer in Yogyakarta Province.

The number of coconut sugar producers registered in ICS KSU Jatirogo is started 1,260 farmers in 2008 and increased to 2024 farmers by the end of 2013. This number is significantly reduced in 2014 due to the split of management in the cooperative, in which one of the managers left the cooperative to start his own business in organic coconut sugar and took with him more than 500 farmers to be part of his supply chain. Within 6 months, however, the number has again increased from less than 900 members by the end of 2014 to 1875 members as of July 2015. The coconut

sugar is proven to be a lucrative business that is profitable to all stakeholders involved in its market value chain hence to some extents affected the dynamic of the cooperative. There has been a management mishap in 2012 that cause the suspension of the certificate and prevented the KSU to engage in international trading. HIVOS assigned business development consultant to help KSU deal with the issues, PT. Damar Jabis, which resulted in the restructuring of the cooperative replacing all management responsible of such mishap/fraud. Farmers lost their trust for a while although with new management it bounced back and regain their confidence to continue working with KSU Jatirogo to trade their produces².

While the dynamic in the management does not affect the activities of farmers in the production side it has slow down the trading in the KSU even after the issues have been resolved. Although the amount of sugar traded keep increasing by year from 47,252 kg in 2011 to 566,522.03 kg in 2013 the market absorption has not yet been met fully. By August 2015 the KSU has stop buying from farmers due to the slow demand from the international buyer. The production capacity in the farmers level continue to increase despite no trading activity happened; with the production level at 150 tons of crystal sugar per month and 2000 tons cast sugar per year the KSU are able to sell in average 350 tons per month. The target market is in local and national market for cast sugar, and international market for crystal sugar. The export destinations for KSU Jatirogo crystal sugar are: USA, Europe, Australia, Asia and Africa.

2.2. The profile of partner in Banyumas – Lembaga Penelitian dan Pengembangan Sumberdaya dan Lingkungan Hidup (LPPSLH)

The LPPSLH or Foundation for Research and Development of Natural Resources and Environment was established on 28 February 1987. The organisation has a vision to become a professional and self-sustained organisation that contributes to social justice and democratisation upon the principles of equality and interdependency. This will be realised by the following strategies:



Figure 3. LPPSLH management and staff

- Effectively manage organizational resources for the sustainability of community empowerment activities.
- Image building and expanding networks based agency independence.
- Develop advocacy and civic education towards strengthening people's organizations as the motor of social movements.
- Developing institutional system professionals by developing administrative functions, MIS and finance an effective and accountable.

LPPSLH has 5 programmes to realise its vision:

- Agricultural Programme
- Forestry programme
- Urban Programme
- Small Business Development Program – Micro
- Regional Office CILACAP

In its agricultural programme, LPPSLH has assisted more than 7,000 small farmers and small producers in 7 districts in Central Java (Semarang, Cilacap, Banyumas, Purbalingga, Tegal and

² Discussion with Caecillia from Damar Jabis and consultancy report KSU Jatirogo 2013/2014

Pekalongan). The organisation's focus in sustainable agriculture and women empowerment raised HIVOS interest because more women are working in agriculture than men but they receive very limited attention. HIVOS' support to LPPSLH for coconut palm sugar started in 2009 following the completion of women empowerment program in agriculture that focus on female farmers involved in the coconut palm sugar production. Similar to Jatirogo LPPSLH also focus on coconut palm sugar as the priority product considering the fact that the southern coastal area of Central Java - Banyumas, Purbalingga, Banjarnegara, Cilacap and Kebumen – are the main producers of coconut palm sugar (cast brown sugar) in Central Java. Feasibility study conducted in 2004 shows that coconut palm sugar has a strong potential to earn premium price in the international market hence open opportunity to generate higher income for small producers and contribute to the improvement of their livelihood out of the poverty lines.

Starting with only Banyumas, then Purbalingga and Banjarnegara, LPPSLH introduced the organic coconut sugar processing only with a handful of farmers in 2007. Similar to Kulonprogo, most farmers in Banyumas and other districts in Banglimascakeb (Banjarnegara, Purbalingga, Banyumas, Cilacap and Kebumen) are all producing coconut palm cast sugar for generations. Therefore it is not difficult for LPPSLH to select the project location for interventions; their vast experiences in research, community development and organizing proven important in establishing farmers' group and cooperative for organic coconut palm sugar.

As part of their efforts to enhance farmers' access to market LPPSLH established P3R (*Pusat Pengembangan Produk Rakyat* – Center of Community Product Development) in 2009, a private company intended to purchase farmers' agricultural produces and sell them in the national or international market. The formation of cooperative, KSU Nira Satria in 2011 redefines the key three pillars of LPPSLH program in coconut sugar. There is division of roles between LPPSLH-KSU and P3R related to coconut palm sugar value chain. With support from HIVOS, LPPSLH is responsible to provide technical assistance to KSU through their FOs in form of ICS training and other know-how of organic sugar production as well as strengthen the organizational capacity of farmers in KSU management, including ensuring that the quality management and internal control system adopted and applied accordingly. KSU Nira Satria and two other KSUs – Nira Perwira and Nira Kamukten (both established in 2013) – are responsible to ensure the adherence to certification standard in the processing and continuous supply of the coconut sugar from farmer groups. KSU made available the internal control system (ICS) team to inspect the quality of sugar produces on regular basis; whereas P3R is responsible to ensure that market available for farmers' produces and they purchase the produces on profitable market price. LPPSLH provides seed capital to P3R for purchasing coconut sugar from KSU, which is then used by head of farmer group/ICS officer/hamlet level middlemen to procure sugar from farmers in their respective team/group.

The model developed in this program has obviously benefited farmers in producing the quality product and gain the premium price for their products. This is proven with the continually increased number in production as well as in selling. For the period of July 2014 to June 2015, for example, P3R is able to sell up to 1,170 tons of organic crystal sugar to the international market; whereas in

the KSU level, Nira Satria for example successfully sold 263,5 tons organic certified sugar and 8 tons natural sugar³ in 2014.

LPPSLH is currently at the end of their second phase program supported by HIVOS and has been able to gain support from the local government, not only in the HIVOS supported locations but also in two other districts in *Banglimas cakeb*, which are in Cilacap and Kebumen. In these new locations LPPSLH provides technical assistance to implement ICS whereas the financial capital for coconut sugar farmers comes from the local government budget.

2.3. Who benefits from the program – coconut sugar farmers

Samsul Arifin is representing the younger generation involved in the coconut sugar value chain. However, he and many young people in the industry do not portray the typical farmers directly involved in the supply chain of the organic coconut sugar. Samsul, Nartam and many other young people in Banyumas coconut sugar value chain are the younger generation with higher education and technology savvy. Different with their parents who are 'penderes' they are familiar with latest technology and use social media to promote the product, access market information and connect with other stakeholders related to coconut sugar value chain.

With regards to the profile of the tappers, however, in both Banyumas and Kulonprogo the average age of the tapper is between 30 – 70 years old⁴. The younger generation of the tapper families is not usually interested to follow their fathers' steps and prefers to take part in other related activities, such as marketing/trading or organizational aspect of the coconut palm sugar value chain. Even if the young ones interested to work as tapper they did only in a spare time when there is nothing else to do around the village. Most of the tappers only has 6-9 years of education and hope that their children will be able to pursue the higher education in the senior high school or even university and does not work as a tapper. Of course there have been some exceptions amongst the young farmers who work as a tapper; a few that has seen the benefit of having involved in the coconut palm sugar production has worked not only as tapper but also act as ICS inspector and trainer for other farmers to adopt the organic standard. In Banyumas, more young farmers work as tappers, middlemen and traders as well as ICS inspectors compared to Kulonprogo. Besides farmers in Banyumas that involved in cooperatives looks more technology savvy and comfortable to use advance technology for getting information or connecting to market in comparison to those in Kulonprogo.⁵

With regards to land ownership, more than 70% of tappers in Banyumas has no land and rent the coconut trees for sugar production from their well-off neighbor with crop sharing scheme⁶; whereas in Kulonprogo, most tappers work on their own land and only less than 30% crop-sharing with other farmers. In addition, since farmers in Banyumas have no ownership to the coconut trees the regeneration is not as extensive as in Kulonprogo. The average age of coconut tree in Kulonprogo is between 2 to 5 years old⁷; whereas in in Banyumas more than 5 years old in average⁸.

³ 'natural' sugar is the organic crystal sugar without CU certification

⁴ Coconut Palm Sugar Impact Survey 2014– conducted by JRI for HIVOS ROSEA

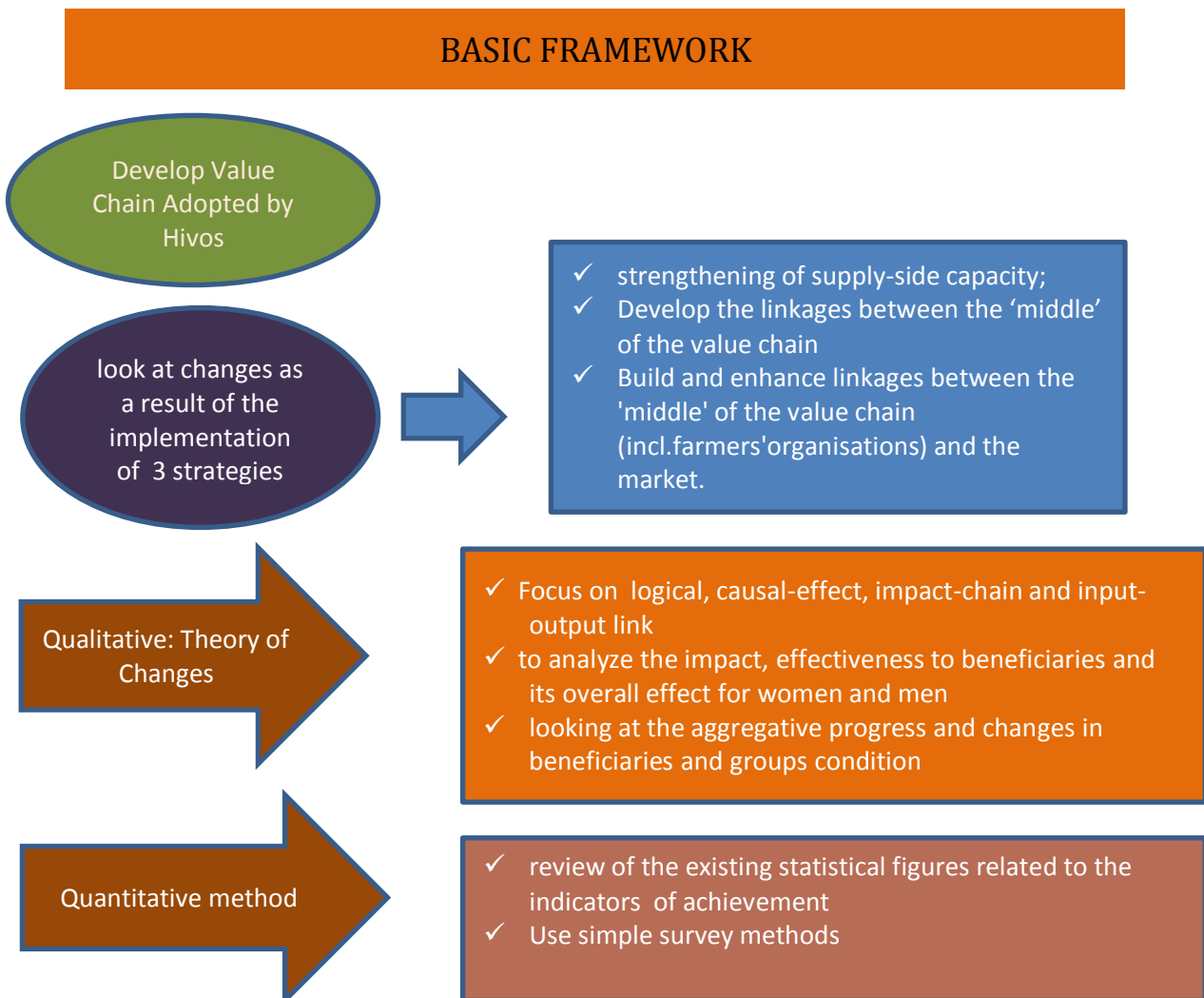
⁵ Observation in Kulonprogo and Banyumas-Purbalingga – discussion with cooperatives

⁶ Coconut palm sugar Impact Survey, JRI 2014

⁷ KSU Jatirogo farmers data, 2015

In both areas, women play a key role in the coconut sugar value chain, particularly on the supply side since they are responsible to process the “nira” (coconut sap) into either cast or crystal sugar. Women are also responsible in setting the price of the final produce although they also consult with their spouse prior to trading. There is a saying that the quality of sugar depends on the mood of the wives; if women happy then the produces are usually of a high quality – but if women not happy then the quality of sugar is usually poor.

3. How the study carried out (Methodology)



The assessment team decided to use the theory change model as the basic framework for the impact study as it will be aligned with the value-chain development approach that HIVOS applies for the coconut sugar program.

Using the model of change the team assessed the impact in each value chain and how each strategic pathway contributes to the changes in the beneficiaries' lives as a result of the program interventions. The model of changes is also looking at the effectiveness and efficiency of the inputs

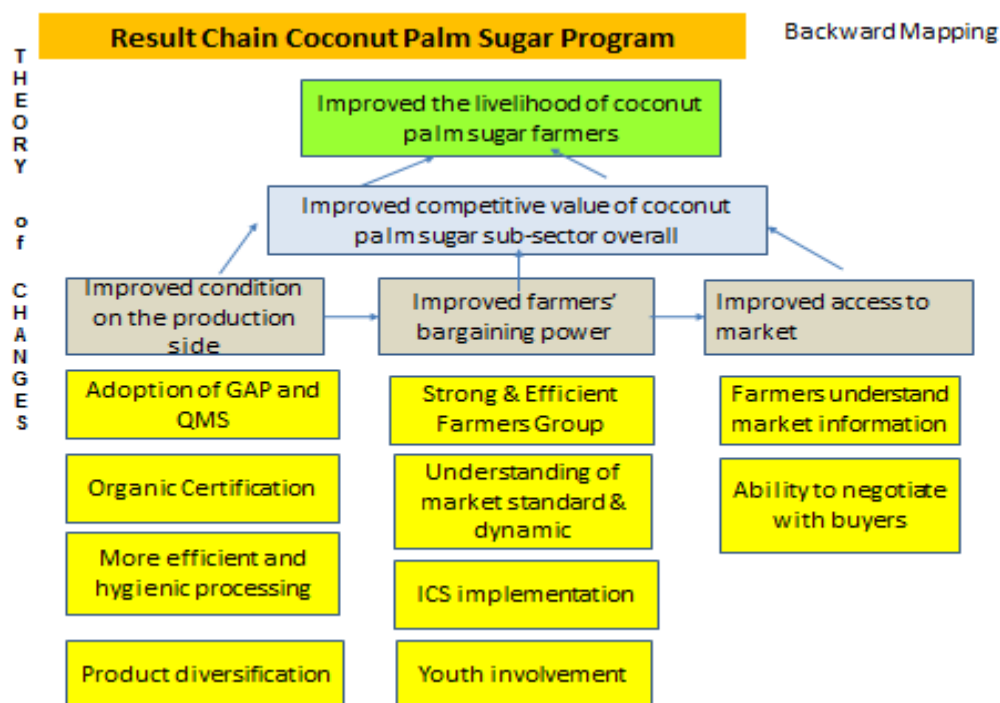
⁸ Discussion with farmers in KSU Nira Satria

provided in the implementation, the strategy being used and the overall impact on men, women and youth.

In order to gather as many information and evidence as possible the team started with reviewing the existing documents related to the program. Since there is no baseline data has been collected prior to the program the team agreed with HIVOS to use the result of the Impact Survey 2014 as the basis for analyzing and validating the changes in several quantitative variables. The results chain is developed based on the description outlined as program hierarchy of changes in the term of reference for the study and also in referring to the program design proposed by LPPSLH that more or less portrayed similar approach adopted by KSU Jatirogo.

Following are the results chain of coconut palm sugar program that HIVOS ROSEA implemented in partnership with KSU Jatirogo and LPPSLH. This result chains is developed based on the program design outlined in the term of reference for the impact assessment as well as review of the program proposal submitted by both LPPSLH and KSU Jatirogo. While this might a simplistic diagram it does helps the team in anchoring the analysis as there is no baseline data available nor a holistic program design that specifically describe the pathway of changes that HIVOS aims to achieve for this coconut palm sugar program

Figure 4. Diagram Result Chains of Coconut Palm Sugar Program



Despite the slightly different model of value chain in Banyumas and Kulonprogo this results chain could be applied to draw generic analysis of the program, as both sites are subjected to similar interventions and aims at achieving similar development outcomes with similar pre-conditions.

While it is difficult to define what outcomes indicator to be used due to the unavailability of the key design document from HIVOS ROSEA it has been agreed that the

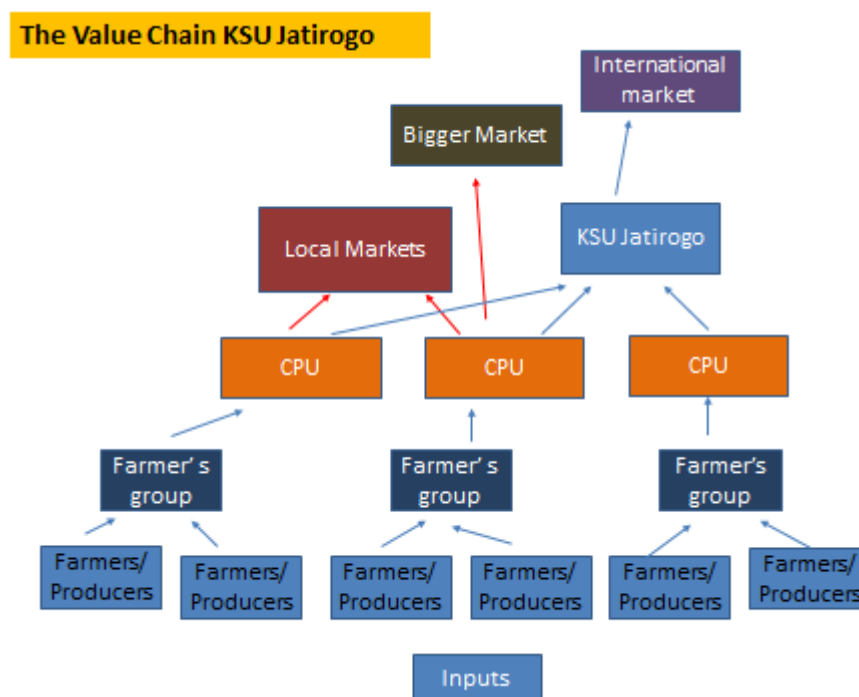
4. What changes happened – data collection and analysis

The program has been developed from originally the sustainable agriculture program covering rice and other economic value crops to organic farming and then organic crystal coconut palm sugar; from the documents and interview with various stakeholders such decision has proven strategic in creating changes in the lives of the targeted communities.

4.1. Models of Coconut Palm Sugar Value Chain

While the interventions in both project areas are similar the characteristic of organization being supported resulted in the different model of value chain in coconut palm sugar. The following figures portray the different value chain model for coconut palm sugar in Kulonprogo and Banyumas.

Figure 5 Value Chain Coconut Palm Sugar in Kulonprogo, Yogyakarta

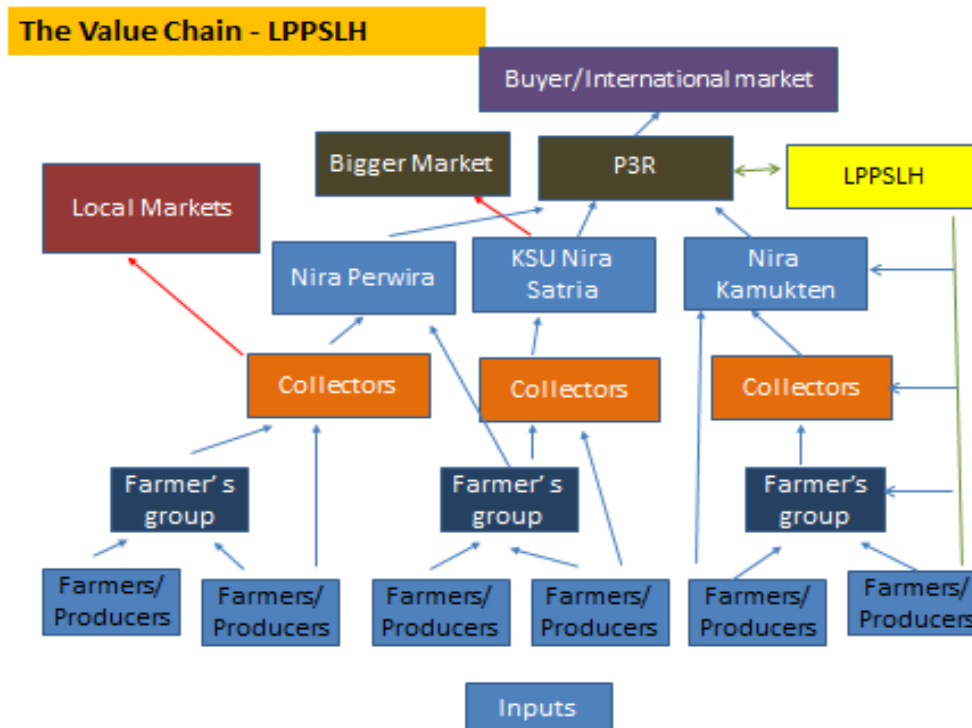


In Kulonprogo, KSU Jatirogo serves as buyer that connects farmers produces with international market. Cooperative purchases the final produces – crystal sugar - from its member farmers that have been processed in the Central Processing Unit (CPU). CPU is responsible to ensure that all farmers/farmers group under their unit follow the organic standard along the production chain. Lesman together with KSU set up the internal control system (ICS) to ensure there will be consistent check and recheck on the quality of the farmers' produces. Each CPU has several ICS Officers that control the process and quality of crystal sugar in the farmers' level; then the Quality Assurance Officer in KSU Jatirogo will carry out the final check of the product in the cooperative warehouse prior to packing and shipping.

In this value chain, the program also recognize the role of the middlemen (pengepul) which is the key actor in connecting farmers as coconut sugar producers to the market. In Kulonprogo, pengepul has taken a role as either head of farmers group or as head of CPU. It means that the program does

not undermine the traditional chain existed in the coconut sugar production, rather revitalize the roles to ensure all benefit from the coconut sugar business. Rawiyo from Jatirogo mentioned that the support from HIVOS/Lesman has enabled all parties earn reasonable profit from coconut sugar, be it farmers, middlemen, cooperatives or buyers.

Figure 6 Coconut Palm Sugar Value Chain in Banyumas - LPPSLH



In Banyumas the value chain of coconut palm sugar is more complex than in Jatirogo since there is a variation in the processing chain. Different from Kulonprogo the cooperative still serves as the big collector for farmers' produces whereas the processing of the final product is carried out in P3R as the connecting chain with international market (exporter).

Cooperatives, however, similar to KSU Jatirogo play the main role in ensuring the organic standard met. Each KSU has its own ICS team that check the quality of the produce as well as the whole processing cycle, from the maintenance of the coconut tree, kitchen, equipment to sugar production and storage. While in the beginning P3R is the holder of organic certification for the whole value chain (land, production, processing and trading) starting 2014 the certificate has also been acquired by KSU Nira Satria. Hence the production, processing and trading could be done in the KSU level. In this case, KSU Nira Satria is no longer acting only as collector (large middleman) for P3R but has already processed, sorted and packed the coconut sugar to the quality demanded by buyer and could sell their products directly to the open market other than P3R. This creates the new dynamic in coconut sugar trading, in which P3R is no longer able to monopolize all products from Nira Satria rather build a contract to ensure they still have their quota from the KSU. On the other hand, KSU Nira Perwira and KSU Nira Kamukten are both still selling their whole products to P3R and still relying on them for processing the final products required by the international market. Although by the time this assessment conducted KSU Nira Perwira is in the process of acquiring the additional parcel of land close to their office to build a larger warehouse with oven to toast the sugar from

farmers, thereby enabling them to process the coconut sugar into the final high quality product and sell them to P3R without requirement for further processing.

4.2. Changes in the supply side of the coconut sugar value chain – development impact

4.2.1. Improved quality of the coconut palm sugar:

It is clear from the observation and also discussions with various stakeholders that the quality of the coconut palm sugar has been significantly improved following the introduction of the organic certification. Farmers have applied more hygienic processing start from the harvest of the coconut sap by ensuring regular cleansing of the container – ‘Pongkor’ – to storage, cooking and drying.

Prior to the program most farmers produced only the “gula cetak” (cast sugar) with low quality hence earn only a low selling price determined by the middlemen. The price could be as low as Rp. 1000 to Rp.3000,-⁹ and the quality is so poor that the produces were often called as ‘gula gemblung’ (crazy sugar), which is watery, often contained dirt and other unwanted materials. This is due to poor maintenance of ‘pongkor’, use of bi-sulfate as coagulant, non-hygienic environment for cooking and drying. Farmers often left the cooked sugar to sunbake without proper tray and even the cooking was usually done in the kitchen with dirt floor and using the wood-consuming stoves that produce not only smoke but also dust contaminating the end produces. Farmers also hardly ever wait for the cast sugar to dry properly before selling due to the requirement to meet the contract that has been set up with the middlemen or small shops in the village.

The introduction of ICS, farmers’ organization and training on organic standard have changed the farmer’s skill in producing the coconut palm sugar. Changes in farmers’ skill and knowledge to produce the organic coconut sugar has resulted the production of high quality produces. Farmers ability to produce the ‘gula semut’ (crystal/granulated sugar) with organic standard has also affect their ability to produce high quality cast sugar. Farmers that involved in ICS are no longer use chemical compound (bi-sulfide) as coagulant rather putting organic matters – “laru” (a mix of lime and mangostene skin) in the cooking process. This produces a healthier sugar as to meet the organic certification standard. Such practice also applies to the cast sugar so that even without certification farmers are shifting to organic sugar production in a whole.

The quality of the crystal sugar purchased from farmers is usually fall into two categories as follow:

- Grade A: at farmer’s level crystal sugar is pan-dried to avoid blob until the color turns light brown and then sieved to the granular size of 18 mesh, with the water content of 2%. The price for this quality is between Rp. 13,000 to Rp. 14,000;
- Grade B: water content 2 – 4%; price Rp. 12,000

The following table shows an example of increased in coconut sugar price in aligned with the improved quality following the ICS implementation:

⁹ Discussion with farmers in both Kulonprogo and Banyumas, 2015; and result of JRI Impact Survey 2014

Table 1. Coconut sugar price from 2008 to 2015 (Kulonprogo)

Year	Cast Sugar (Rp)	Crystal Sugar (Rp)	Remark
Before 2008	2.500 -4.000	-	
2008	5.000-6.000	8.000	Oven and packing in KSU
2009	5.000-6.000	10.000	
2011	11.000	12.000	
2012	12.000 - highest 15.000	15.000 -15.500	Oven in CPU/Warehouse, packing at KSU
1012 - 2015	12.000-13.000	15.000 - 15.500	
2015 (July)	13.000	-	Cooperative halt purchase from farmers for crystal sugar
2015 (August)	10.000	-	Cast sugar overproduction – price set by market/buyer

Source: FGD with members of KSU Jatirogo – CPU Soropati

The factors contributing to the improvement of sugar quality includes among others: Improvement of skill and knowledge in processing coconut sap to crystal sugar, improvement of environmental sanitation and hygiene in the cooking process, improvement of cooking facilities (energy saving stoves, healthy kitchen, tray for sunbaking, oven for drying), and also adoption of good agricultural practices (GAP) through the maintenance of coconut tree to be pesticide and chemical compound free, as well as regular checking of coconut florets and regular cleansing of ‘pongkor’.

The establishment of ICS team has also proven key in ensuring the production of quality crystal sugar since the ICS officer will continually checking and providing technical assistance to farmers under their supervision to always adhere to the organic standard to meet the international certification regulations.

4.2.2. Improved skill and knowledge of the farmers in producing the high quality sugar

Farmers in the targeted villages have been able to produce high quality crystal sugar catered to the international market demands. Since the international buyer required the adherence to organic standard farmers have been encouraged to improve their processing practices in order to be able to meet this standard. Partner organizations in both Kulonprogo and Banyumas as certificate holder provided necessary training to the farmers to enhance their capacity in processing “nira” - the coconut palm syrup from coconut florets (Manggar) into the premium quality crystal sugar. This is not an easy process since the FO (Field officer/Petugas Lapang – Ind) has to work closely with farmers and convince the farmers to change their former practices.

FOs work with the farmer leaders and those who are willing to be pioneers in trying out the new technics but also ensuring that the whole process meet the standard requirement. In both project areas the process to educate farmers to shift from traditional to organic processing has been a tedious and time-consuming process where FOs often has to stay for long period in the villages to convince farmers to participate in the ICS for organic coconut sugar.

In both Kulonprogo and Banyumas, the adoption started with a handful of farmers that willing to try out the process. The reasons for big resistance from farmers are related to various factors that considered as challenging for most, such as:

- Farmers have inherited the sugar business for generations and almost always produce the cast sugar since it is easier to produce and could be sold faster in the local market or even direct to the middlemen without the need to leave their house;
- Producing the crystal sugar take longer (1-2 hours longer than cast sugar) and the result may not as satisfactory;
- There has been no guarantee that the price could be profitable to farmers since they cannot sell the product to local market;
- Farmers has no sufficient equipment to produce the required product and the cooking environment is not conducive to process the organic coconut sugar;

In short it is difficult to change the long ingrained habit in processing the coconut palm sugar because adopting the ICS means that farmers have to change the whole production process, from sanitizing the coconut farm, tapping the coconut sap (nira), keep the sap container clean, and improve the cooking environment to the change in sugar production processes.

The FOs encourages those interested to try to attend training in agriculture quality management, internal control and organizational development to another group that has already participated in the ICS for coconut sugar. In Banyumas, for example, Sakun, who learned the crystal sugar production from government agency in 1993 has been first that agree to join the program. He participated in the ICS training right after the program commenced and has since become the role model for fellow tappers in the promotion of ICS for coconut palm sugar. As key members of KSU Nira Satria, both young farmers (early 30s) have been responsible in managing the cooperatives, recruit and train other farmers to be a member of ICS team¹⁰. While the process of recruiting tappers to participate in ICS team a bit slow, in which farmers have to learn to adjust to the phase of production that took 30 minutes to 2 hours longer than the processing the cast sugar, at the end more farmers finally peak interest to join the program. One of the reasons is that while it may take longer to produce the crystal sugar it worth the efforts with the higher earning they obtained from the product.

Similarly in Kulonprogo, the movement to participate in ICS for coconut palm sugar has been initiated by Rahmadi (tapper/middleman) from CPU Soropati, the largest CPU in Jatirogo with 600 ICS members. He offered Basuki (tapper and hamlet level middleman) and Suparman (tapper) to attend training in crystal sugar production and ICS. Visioning the new techniques to be profitable in the future Basuki then transfer his knowledge to the fellow tapper (Sadali); afterwards the initiatives keep rolling and more farmers interested to learn the organic crystal production and later become members of ICS. One of the incentives that Basuki offered to farmers, as a village level middleman, is guarantee to buy the product once farmers agree to join the ICS team¹¹. This is proven effective in motivating farmers to participate, especially when they found that the organic crystal sugar earn a higher price than cast sugar.

¹⁰ FGD with farmers in Banyumas and discussion with staff at LPPSLH, KSU Nira Satria

¹¹ Focus group discussion with farmers at CPU Soropati, Kulonprogo

SAKUN - Profile of the humble farmer who promotes the Organic Coconut Palm Crystal Sugar in Banyumas



Sakun (45) is a founder of Farmer Group Manggar Manis at Kedungurang Village, Gumelar Sub-district, Banyumas District. He is one pioneer in adopting the organic coconut sugar in the area (1993). Not only he is busy with his farmer group but also actively promoting ICS in organic coconut sugar to other areas. He first learned to produce the crystal sugar from government in 1993 and has been among the first that producing crystal sugar in addition to cast sugar. He joined the program with LPPSLH/CRS forestry in 2009 together with another 2 farmers. The number increased to 12 farmers in 2010 and even more in 2011 after the price of cast sugar dropped from Rp. 8000 to Rp. 5,000, whereas the price of crystal sugar remained at Rp. 9,000. With more farmers produced crystal sugar the middlemen, who were mostly village leaders or wealthy farmers, lost their supply because farmers more interested to sell crystal sugar than cast sugar. There has been threats and intimidation addressed to Sakun, Hartono (FO LPPSLH) and farmers that almost led to conflict. LPPSLH then organized the mediation meeting that in the end motivated middlemen to also join the ICS promoting organic crystal sugar.

Sakun continue to educate his fellow tappers on crystal sugar production and made available his kitchen as learning venue for other farmers from his village or other areas in Banyumas and out of Banyumas. Sakun established Manggar Manis farmer groups in 2012 with 148 members and during this year 176 tappers engaged in crystal sugar production and only 10 continue to produce cast sugar. By 2014 to 2015 90% of farmers in Kedung Urang village produce crystal sugar and it has 6 ICS cadres (age 20 -30) under KSU Nira Satria. Sakun has been instrumental in promoting organic sugar in Banyumas, and he always open his house for others to learn. His kitchen that is equipped with energy efficient stoves completed with chimney has ceramic floor and always clean and tidy. Similarly with racks for equipment, pongkor and sugar storage – all packed neatly in 10-15 kg plastic container.

His commitment and hard work to promote organic sugar has resulted in not only financial benefit but also recognition from many parties that appreciate his contribution in creating crystal sugar as one of the main commodities in Banyumas that could be the source of district economy. From organic sugar he is able to renovate his house, send his children to gain higher education and buy vehicles. His dedication to organize farmers and coconut sugar give him and his group special award for young entrepreneur from the President Soesilo Bambang Yudoyono in 2014.

Source: Discussion with Pak Sakun, Kedung Urang – Gumelar, Banyumas

The role of FOs from LPPSLH, P3R and KSU Jatirogo is crucial in ensuring the capacity development of coconut sugar farmers in both Banyumas and Kulonprogo. By time, however, ICS cadres in KSU are gradually taking over this role as training facilitator and quality control, whereas FOs serves as provider for technical assistance.

Over the course of 7 years ever since the program implemented the level of knowledge and skill in the farmers level has substantially increased. In both areas the role of NGO as facilitator and trainer as well as field inspector has gradually been taken over by farmers/cooperatives. In KSU Jatirogo, the role of Lesman as initial agent of change has successfully been handed over to KSU management,

which was delegated to CPUs. Similar phenomenon is also happening in Banyumas, although the role of LPPSLH is still strong.

4.2.3. Improved environmental sanitation and hygiene in cooking process

Another factor contributes to the improvement of sugar quality is also the improvement in the sanitation and hygiene in the environment of cooking processes. Starting from tapping the coconut sap; regular cleansing of “pongkor” is the good practice to maintain the quality of “nira”, which then followed with the use of sanitized cooking environment that turn the traditional cooking facilities and locations into healthier and cleaner kitchen and energy efficient stoves. Producing organic certified produces means that farmers have to meet several regulations that will ensure the quality met accordingly. ICS training and field inspection allows farmers to adopt the new practices.

With support from LPPSLH and KSU Jatirogo farmers gradually modifies their cooking facilities from the traditional ones. Not only they received the new skill and knowledge but also received financial support to build the new kitchen and other production equipment such as sieve and tray for drying. In Kulonprogo, for example, with financial support from Dinkop (Cooperative District Office) KSU



Figure 8 Healthy Kitchen Coconut Palm Sugar producer - Kulonprogo

allocated Rp. 440,000,000 to 44 farmers for building the healthy kitchen from April 2014 to March 2015.¹² KSU also provides support to build the energy-efficient stoves to help reduce wood consumption in the cooking processes. From 2008 to 2013, for example, they have built 562 stoves at a value of RP. 250,000,000 (each producer received construction fund @Rp.400,000)¹³. Similarly in Banyumas, learning from LIPI and Dian Desa, LPPSLH also introduced the energy-efficient stoves to ICS members with financial support from LPPSLH, Cooperative District Office, and KSU¹⁴. The use

of this new stove is proven beneficial for farmers as it save fire-wood up to 30% hence reduced the production cost¹⁵. Besides women also feels that using the energy-efficient stoves and work in clean kitchen help in improving family health condition since they are no longer exposed to heavy smoke and dust particle that often cause the acute respiratory infection in children especially. Better

kitchen also motivate farmers to help women in the sugar cooking process hence the production time is also more efficient with both men and women work together.¹⁶ The improved process does not stop in the kitchen but continue in the drying process. While the final drying to be conducted in CPU (Kulonprogo) and KSU or buyer (P3R – Banyumas) the first step is carried out in the farmer’s level. In the past farmers spread the sugar to sunbake on the thin plastic wrap directly on the ground; after



Figure 7 Energy efficient stove - Kulonprogo

¹²Healthy kitchen project report – KSU Jatirogo 2015

¹³ Energy efficient stove project report – KSU Jatirogo 2015

¹⁴ FGD and interview with LPPSLH, KSU Nira Satria and KSU Nira Perwira, and Bappeda Banyumas

¹⁵ Impact Survey JRI 2014

¹⁶ FGD with women in Kulonprogo and Banyumas

the program however farmers sundry their half-finished product on the tray on the higher stage to avoid animal passing or dirt contamination¹⁷.

4.2.4. Improved agricultural practices

The introduction of ICS, improved knowledge and skill among farmers also led to the improvement in agricultural practices, especially in the maintenance of coconut trees. In accordance with organic standard it is essential to ensure that the standard criteria apply not only in processing stage but also in the farmland. To ensure the production of 'nira' farmers are required to maintain their trees to grow healthy by providing organic fertilizer (manure) and regular weeding; also ensuring that any farming activity on the farmland surrounding the trees free from chemical fertilizer and pesticides. Good maintenance allows farmers to sustainably harvest the coconut sap in abundance with a good quality. In Banyumas, with most tappers are adopting the crop-sharing scheme an effort has been made to involve the owner in the maintenance process. This is particularly important in the process of trees regeneration and maintaining the healthy environment for organic production. While in Kulonprogo since most tappers are also the owner of the coconut trees regeneration seem to be no problem, in Banyumas this remains challenging although local government has tried to introduce the new variety of coconut tree that will ensure the higher produces of 'nira'¹⁸.

In Kulonprogo, the application of ICS in coconut palm sugar also affects the adoption of organic farming in other crops. As tappers are majority the land-owner and cultivate other food crops on their land they extended their practices in coconut sugar into other commodities as well. Farmers reduced the use of chemical fertilizer and pesticide in their farmland and eradicate completely the use of chemical compound in the area close to the coconut trees.

4.2.5. Product diversification

The improvement in product quality has resulted in higher interest from buyers to purchase the organic sugars even without certificate. Farmers who are member of ICS also often train other farmers who are interested to adopt the organic practices without necessarily sign off as member of cooperatives. As certified organic coconut sugar majority allocated for international market it is



often difficult to expand the national/local market as consumers not yet familiar with the benefit of consuming organic crystal or cast sugar. Therefore farmers in many target areas have started to develop spiced crystal sugar targeting the local/national market. In Kulonprogo, KSU Jatirogo produced ginger spiced crystal sugar and sold them in the local market or national exhibition. Local consumers seem to be interested to taste this type of coconut sugar as it brings the local flavor suitable for local palates. In Banyumas, KSU Nira Satria has also started to produce ginger and herbal crystal sugar for local retail market. The products are

sold in the local shops in an attractive package as souvenir from Banyumas. They also sold the ginger spiced coconut sugar to Japanese market since 2012.

Product diversification is important if producers aimed at targeting local market. Crystal coconut sugar is not as popular as sugarcane sugar (white sugar) since people has not been aware of the benefit of consuming this brown sugar as opposed to the white sugar. Nutritionist claims that

¹⁷ Observation and discussion with farmers, FOs and KSU

¹⁸ Discussion with head of Economic Bureau Bappeda Banyumas

organic coconut sugar is actually healthier than white sugar because it content natural compound that will ensure the production of insulin thereby prevents the possibility of diabetes due to sugar over-consumption. While many people in Indonesia has used coconut sugar in various traditional dishes, they usually use only cast sugar and not really understand that the organic sugar is healthier choice. Proper education and outreach promotion to consumers is essential in ensuring the creation of local market for organic coconut sugar.

4.3. Changes in relations between farmers and middlemen/market – increased bargaining power of coconut sugar producers

Aside from improved quality of the products that derived from enhanced capacity of producers to produce the organic coconut sugar and the improved environment of production processes that led to better price of coconut sugar, the program has also bring changes in the relations between farmers and middlemen or market that resulted from the improved bargaining power of coconut sugar producers. Farmers' confidence to bargain with middlemen or market derived from stronger social relations and more cohesive organization. Another contributing factors are increased understanding of farmers on market dynamic for coconut sugar, also the participation in ICS implementation as well as increased participation of the youth in the coconut sugar value chain.

4.3.1. More efficient and stronger organization

Farmers have for decades organize themselves into farmers group with the intention to have more united front in production as well as strengthen their position in the social economic spheres. In both project areas farmers have originally established organization based on the spread of the farmland and focus mainly on food crops such as rice and vegetables. Such organization, as in the case of Kulonprogo involves only those who own the farmland whereas share-croppers, farm labors or tappers of coconut palm sap often marginalized and have no say on the farming activities. Coconut palm sugar changes this dynamic and allow all farmers, land owner and not to get together in the farmers organization. In this case the role of NGOs as facilitators proven effective in ensuring such organization function in more professional and efficient manner.

In Kulonprogo, the role of Lesman in facilitating the organization of farmers resulted the establishment of Paguyuban Petani Jatirogo in 1999 that focus primarily in advocating food sovereignty and the rights of farmer to go back to nature by adopting the natural or organic farming system (non-certification) as practiced by their ancestors before green revolution. This movement becomes the main drive to form coconut sugar organization through the establishment of KSU Jatirogo in 2008. It is clearly not an easy path to travel for the farmers' cooperative in managing the coconut sugar business. Organic certification that enables farmers to engage in the lucrative business of organic coconut sugar creating an unexpected demands towards the management as farmers are suddenly exposed to the large trading that connects farmers directly with exporters.

Farmers used to manage a relatively subsistent level of agribusiness that only serve the local market hence they were not well equipped to deal with large scale trading activities linked to the international market. Business growth can be overwhelming and affects the dynamic within the management. In 2012, for example, with the good intention to facilitate more farmers outside of the cooperative the management released the coconut sugar to the export market without proper documentation (no TC – transaction document). This resulted in the suspension of the organic

certificate to KSU Jatirogo and subjected the cooperatives to fine up to Rp. 900 millions. To address the issue Hivos supported KSU Jatirogo by providing technical assistance from PT. Damar Jabis that facilitated the implementation of quality management system (QMS) and ensuring the ICS standards being implemented as well as restructuring the cooperatives management to align with market demands. This is a smart move as it allows the cooperative to clean up their action and back to business with more professional management. The new management is proven capable in handling the certification issues and deal with fraud committed by unnamed personnel, and slowly gain profit and earn back the membership of ICS farmers in 2014¹⁹.

In Banyumas, the division of roles between LPPSLH, P3R and KSUs help creating the conducive environment for more efficient and stronger organizations. Proper facilitation, accompaniment and training in management to farmers through ICS enable farmers to focus in the management aspect of coconut sugar business. LPPSLH focus on providing technical assistance by initially embedded into the cooperative helps cooperative management to learn firsthand the day to day operation of managing the coconut sugar business, managing relations with members and facilitating the ICS training and field control for quality management.

Through cooperatives farmers have not only gained confidence to express their interest and concerns but also learn from each other to enhance their capacity in dealing with middlemen and market. Each element of the supply chain that link to cooperative has functioned effectively ensuring the continual flow of supply and demand of coconut sugar met without a hitch.

KSU Jatirogo has since 2008 dealt directly with the open market whereas KSU Nira Satria began their direct link to bigger market and not solely to P3R in 2014. These are the evidence that organizational wise, given sufficiently trained in management, farmers are able to run their own course with minimum support from the NGOs.

4.3.2. Increased understanding of market dynamic

Farmers who are involved in ICS and cooperatives have a stronger bargaining power since they also have a better understanding on market dynamic for coconut sugar. In both Banyumas and Kulonprogo, cooperatives have access to internet and easily look for required information related to coconut sugar market.

The shift to organic crystal sugar production has changed the playing field for coconut sugar trading. Farmers as the lowest in the value chain no longer in the disadvantaged position as they are able to negotiate with middlemen on the price of their product. The increased value of sugar product in the form of organic crystal sugar has also increased the value of the cast sugar that farmers produced originally. Through the ICS/cooperatives farmers are no longer oblivious to the market dynamic and could negotiate with the middlemen to give them a better price for their product.

While the farmer not always been informed on the selling price of their products to the international market they understand that the price they got from cooperatives is higher than the usual price set by the middlemen, In Banyumas, the price at the farmers level is Rp. 12,000 to Rp. 13,000, the ICS/farmer groups/hamlet level middlemen sold it to village middlemen at Rp 12,500 – 13,500, which was then sold to KSU at Rp. 14,000, and P3R paid Rp. 15,000 – 16,000 per kg to KSU (depends

¹⁹ Discussion with Theresia Eko Setyawati – Manager KSU Jatirogo, 2015

on the grade). Similarly in Kulonprogo farmers sold their product to head of farmer groups at the price of Rp. 15,000 to Rp. 15,500/kg, and earn Rp. 500,-/kg of the price sold to CPU/warehouse, then CPU add another Rp. 500,- to Rp. 1,000 at the price sold to KSU since CPU/warehouse is responsible to process and sort the quality product to the standard required by buyer. KSU sold the end product to international buyer at the price of Rp. 20,000 to Rp. 23,000/kg based on the market price negotiated with buyer in the contract (the price as of July 2015).

Although the understanding of market dynamic has been increased there seems to be no clear strategy for market expansion, especially in Kulonprogo. The strict rules over buyer criteria seems to deter any potential buyer to enter the contract with KSU hence only a handful of big buyer willing to purchase products from KSU; whereas in Banyumas there seems to be no such restriction hence enable them to enter trading transaction with more buyers. P3R and KSU Nira Satria keen to enter negotiation with buyers that will give the most benefit and do not apply too many rules that could hamper the business transaction.

4.3.3. ICS Implementation

One of the key factors in ensuring farmers' interest to meet the quality coconut sugar is the implementation of internal control system to continually assess the quality products in the field. All farmers that have attended ICS training are in principle becomes the member of the ICS team although not necessarily becomes a member of the cooperatives.

While in the beginning NGO is the responsible party to conduct field inspection as part of the ICS procedures it has gradually handed over to cooperatives/farmer groups/CPU. More often the head of the farmer group/CPU is also coordinator of ICS for the group members/KSU. As part of KSU management there is Quality Assurance Officer (penjamin mutu – Ind.) that ensuring that all CPU/farmer groups meet the expected quality required by organic standard.

The tasks of the ICS Team are²⁰:

- Checking the quality of sugar in the farmer level;
- Keep farmers registration data
- Controlling the coconut tree maintenance to avoid exposure to any chemical pesticide (roundup)
- Training farmers on technical aspect and effective schedule of tapping (early morning before the sun up)
- Training farmers in maintaining the cleanliness of sap container/pongkor (majority made from Bamboo and small number of farmers still using petrol/oil can);
- Mapping the farmers land (looking for the farmland/coconut trees in the village that has not been contaminated by chemical compound or far from non-organic rice field);
- Conduct training on crystal sugar production – in the beginning it's conducted door to door to individual farmer;
Facilitates training on the use of equipment (sieve, tray, stone for grinding, etc.)
- Training farmers in using the energy-efficient stoves, either hand-made or built-up from KSU;
- Respond to farmers' concerns regarding the tapping process, such as: murky sap, quick fermentation, "laru" making, failure in cooking 'nira' into liquid/emulsified sugar (uneven cooking), creating blobbed/bubbly sugar (gula 'brondol" – local term), dark color of end sugar product, etc.

²⁰ Interview with ICS team Nira

- Conduct internal inspection for organic certification;
- Documenting product code and data of each farmer, such as land status, number of coconut trees, land ownership, number of sugar produced, etc.

KSU Jatirogo that received certificate from Lesman in 2009 has been able to finance the certification fully in 2013 (25% in 2010, 50% in 2011, 75% in 2012). In average they have to allocate up to Rp. 150 million for certification annually. Whereas in Banyumas, KSU Nira Satria still received support from P3R/ LPPSLH for certification up to 50% and 100% to KSU Nira Perwira and KSU Nira Kemukten.

The ICS team is responsible to conduct field inspection and for their service they are paid from Rp. 150 to Rp. 200,- per kg of sugar. It is noted as well that the certification control is carried out not only to farmers but also to middlemen/collectors, particularly in the aspect of storage/ warehouse, inventory and coding for traceability of product.

4.3.4. Youth involvement

There is no doubt that the promotion of certified crystal sugar has changed the dynamic of youth labor in the target villages. While young people that have high education may not interested to be a tapper as their parents, they are very keen to involve in the business. In most production centers we still could find tappers around mid-20s or 30s, but mostly are over 50s with the oldest over 70st. Tapping the coconut sap need experience and expertise, in which each farmer could climb and harvest the sap from coconut trees from only 5 trees (for beginner or old tapper) to 50 trees a day for seasoned tapper.

ICS implementation draw young people in the coconut palm sugar value chain because they could take part in the organizing, training and field inspection as ICS team. In addition, the formation of cooperatives also gives opportunity to young people to work as part of management team. Other than in supply chain young people also keen to get involved in the trading/marketing side, particularly as collector/middlemen.

From field observation and discussion with all parties it is obvious that youth involvement is much stronger in Banyumas compared to Kulonprogo. In Banyumas, all managers from the three KSUs are in mid-20s to early 30s; the management team also relatively young, which is also the case in KSU Jatirogo. All these young people are descendant of tapper families and have enjoyed education in a higher level than their parents to be able to work in the management aspect of the cooperatives. In Kulonprogo, although the management team members are all young and also from tapper families the manager is formerly work with Lesman and have been considered as not equal to other cooperative board members who are mostly senior farmers/landowners in Kulonprogo.

Nevertheless, the fact that all these young people attended at least senior high school level of education proven bring different dynamic to the cooperatives. Most of them are familiar with



Figure 9 Samsul and KSU Nira Perwira managing staff

computer, smart phones and social media; hence they have no problem to use technology to access market information or explore possibility for online marketing and promotion.

Samsul Arifin, the manager of KSU Nira Perwira mentioned that he dream to make KSU as the main cooperative for all coconut sugar farmers in Purbalingga. His staff who are

mostly young and female also seconded his opinion and proudly stated that it is their duty to help their parents; and while they are not interested to be tapper as their parents they are happy to be able to work alongside their parents managing the organization and business aspect of coconut sugar. Although young Samsul get full support from the members of KSU who are mostly the same age with his parents if not older (above 40), because he is well educated, smart and have a high spirit to improve the lives of the tappers. Albeit young, under his leadership KSU has grown triple in its memberships and profit since its establishment in 2013. KSU assets have increased from only one office building into more additional land to build warehouse and processing unit. KSU also share its dividend and encourage farmers to save part of their earning from sugar in the KSU. Similar to KSU Jatirogo KSU Nira Perwira also has started to cover insurance for its members.

Similar story is shared by Nartam, chairman of KSU Nira Satria, who formerly worked part- time on various odd jobs and graduated from junior high school only. After attending ICS training with LPPSLH and involved in coconut sugar value chain he is active in the cooperatives and got his off-class senior high school degree. Not only he becomes more confidence as chairman of KSU but also actively promoting organic coconut sugar in various events. Together with his colleagues in KSU Nira Satria, such as Abidin (Manager) and Kuntoro (ICS Coordinator), he led the cooperatives to gain organic certificate independent from P3R in 2014. Under his leadership KSU thrives to benefit his members and grow from only 27 members in 2011 to 1072 members in 12



Figure 10 KSU Nira Satria secretariat office



Figure 11 Director-Manager and ICS Coordinator KSU Nira Satria

villages, including as 30 middlemen and 34 members (11 women and 22 men) of ICS Nira Mas. The volume of products traded also increased from only 300 kgs/month in 2011 to averagely 21.4 tons/month in 2014 (255 tons/year). KSU also started to sell to other buyers aside P3R and produce the retail package (@ 250 gr) sold in the local market and via on-line.

Similar situation in Kulonprogo also shows that young people could take important role in operationalizing the organization such as cooperatives. Young women in particular seems to be more comfortable to work in

management aspect of coconut sugar value chain, be it in cooperatives or trading company such as P3R processing unit. It shows that coconut sugar production has become the attractive agribusiness where young people could get opportunities to grow their business sense and thrive into young entrepreneurs.

It is obvious that the roles of the young people in coconut sugar value chain are crucial in ensuring the sustainability and growth of this business. Their initiative and creativity contributes significantly in promoting the organic coconut sugar in a wider community. Young people shows that coconut sugar production could be managed in more sophisticated way and could change the playing field.

Hence the profession as tapper should not necessarily be associated with marginal impoverished segment of community.

It could be concluded that the ability of farmers to strengthen their organization, good understanding on market dynamic and information, also commitment to ensure that the ICS practices adopted and implemented in their coconut sugar production, as well as involving young people in the value chain will create the different dynamic in their relations with middlemen.

Farmers no longer depend on the middlemen and indebt indefinitely to the point where middlemen monopolize the supply and market price without being contested or questioned. Farmers have more say in setting the price and have freedom to sell their products to any market of their choice. On the other side, the middlemen also realized that instead of continue to dominate the market chain and lost their chance to earn profit in the potentially lucrative business, they decided to join in the ICS movement and be part of the chain that shares profit with farmers and market. In Kulonprogo, for example, there are 26 middlemen who are currently being a member of ICS team/KSU. This new relations create a more balance and fair relationship between stakeholders in the coconut sugar value chain.

4.4. Changes in relations between farmers and market

Prior to the program farmers always in the lower end of the bargain and as the result they almost always in the most disadvantaged situation. Farmers' participation in the program has changed such relations somehow. By taking part in the cooperatives farmers clearly have a better access to market and also have more confidence to negotiate with buyers over the price of their products.

4.4.1. Improved access to market and understanding on the market information

The decision of farmers to join ICS/KSU clearly opens the new opportunities to engage with market directly. Farmers no longer sit in the back seat rather take in charge and steer the wheel to choose any buyer in the market chain. Producing the certified organic sugar means farmers have a better price for their product and they could sell their product to any who could offer them the good price. Since cooperatives have access to open market the members also have a clear understanding that their products have more value than the non-organic produces. Farmers understand that buyers interested in their product and willing to pay a premium price. This information is made available not only from the cooperative management but also from the internet search, given that most of management team of cooperatives are young and technology savvy; Besides farmers that already have a higher confidence could easily challenge buyer or middlemen in this case to give them a fair price in accordance with the market demand.

Being part of the value chain, farmers now understand that each level will get a small amount of profit from coconut sugar trading. Although not all farmers understand the price in the international market/buyer/exporter they have enough information on the price in the middlemen and KSU level. KSU that has a direct access to market clearly aware of the price in the international level since they have to consider various offers coming from different buyers. Hence indirectly farmers actually have this information for it could be easily checked from the trading report of KSU. In the case of Banyumas P3R has this information and may not necessarily share such information with farmers.

4.4.2. Improved capacity of farmers to negotiate with buyers

This is the part of the value chain where farmers show the benefit of participating in the program. Not only farmers understand the market dynamic (through cooperatives) but also have more confidence to negotiate with buyers. As mentioned earlier farmers finally have freedom to choose with whom they will have trade transaction.

As not all farmers who attended ICS automatically become the member of KSU it is possible for them to sell their product not to KSU but to other buyers that willing to pay at an equal or higher price and with cash on delivery (meaning right away – without down payment). For example, when the price of the crystal sugar drops farmers choose to produce more cast sugar and sell it to middlemen at the good price set by the fluctuation of crystal sugar price. Farmers are no longer willing to sell the product at the price dictated by the middlemen. When KSU is unable to buy all coconut sugar produced by farmers due to the unavailability of fund in the cooperatives farmers decided to sell their product to other buyer at the price higher than cooperatives. This is happened for example in Kedung Urang Village Banyumas in 2012 when farmers decided to sell their product to Big Tree Farm (buyer) agent directly at the price of Rp. 14,000 which is slightly higher from KSU/P3R at the price of Rp. 13,500. The reason is sometimes simple considering that many buyers are willing to buy organic product without certification.

KSU Jatirogo, for example, decided to only sell their product to a buyer that is willing to pay taxes and sign up the long-term trading contract with KSU. This is the strategic choice since the amount of tax to be paid could take a high portion of profit supposed to go to farmers. In 2014 KSU Jatirogo should pay Rp. 800 million for tax, which clearly too burdensome for cooperative that primary purpose is to share profit with its members. This is the rare case of course, because not all buyers willing to include tax in the price. And to some extents the rigid criteria of buyer set by KSU limits their market expansion as even the local market is considered as not profitable to KSU

There no doubt that organic sugar has attracted buyers to be in contact with farmers directly and vice versa. KSU Nira Satria, for example, which currently produces more than 200 tons sugar per year has sold their product to three other buyers in Surabaya and Semarang, and their relationship with P3R has changed from partnership into contract agreement where they have an obligation to supply the certain amount of product as requested by P3R (at least 50 tons per year). This positive development somehow creates a slight resentment from P3R since they feel that KSU Nira Satria is no longer the loyal supplier that prioritized P3R order.

4.5. Changes in the economic aspect:

The program has clearly benefited the small producers of coconut palm sugar. The level of income the farmers earned from coconut palm sugar has been steadily increased up to 100 % compared to before the program. Farmers received the higher price for their produces since they have gained better skill and knowledge to improve the quality of their sugar. With the new skill they are able to produce the crystal brown sugar with organic certification to meet the standard required by consumers/buyer from the international market. The price of certified crystal sugar is Rp. 12,500 – 17,500 per kilogram in the farmers' level, which in turn also increase the price of the cast sugar between Rp. 7,000 – 10,000 (the original price prior the program between Rp. 3,000 to Rp. 5,000). This is profitable to farmers considering that cast sugar needs 6 liter nira per kg of end product and crystal sugar need 7 liter per kg end product. As mentioned by Rawiyo, farmer from Kulonprogo,

when he started to join KSU Jatirogo as one of key leaders in promoting coconut palm sugar, his dream is to make the price of coconut palm sugar equal to rice instead of lower²¹. This is a simple dream that is proven not impossible to reach as the price of coconut palm sugar now is almost twice the price of rice (crystal sugar) and the lowest is still slightly above the price of 1 kilogram of rice. And Rawiyo for one, has turn his luck from a simple farmer with tapping as a side job into a much better off middlemen who manage a relatively large number of coconut palm sugar producers and link with big market directly cater to international buyer in US. He mentioned that the tappers are no longer live in rags but also could finally experience the life of the riches.

The use of energy-efficient stoves has reduced the production cost from fire wood up to 30%²². Farmers who participates in KSU learn to have saving as from each kilogram of transaction they have to allocate Rp. 1,000 to put into their saving in KSU. Hence by the end of the year they in average received dividend from Rp. 1,000,000 to Rp. 2,000,000 million; this amount is significant for farmers who never before have saving.

With the better price for their product, be it crystal or cast sugar farmers received higher household income from coconut sugar. They are no longer indebted to middlemen or village shop/trader hence have enough cash to put in the saving to be used for productive needs, such as sending their children to junior/senior high school, house renovation, purchase vehicle (motor bikes), purchase farm land, and purchase furniture/household appliances, etc.

The downside of the improvement of economic situation is farmers tend to lean into using the excess of income for consumptive produces that may not a priority for their households. They are also have more confidence to take a bigger loan from the bank which means fall into another debt cycle although it may not as bad as their relations with the middlemen prior to the program.

While it is not possible to attribute changes in household income solely to the improvement of sugar quality, especially when family has other source of income, it is obvious that in average farmers' income have increased at least 20 to 30% overall.²³ In some cases where coconut sugar production is the main source of income the increase could be up to 50%²⁴. As one of farmers said the coconut sugar is no longer a menial business rather it has turned into a lucrative one that brings millions to farmers, middlemen, buyers and even government.

In the market chain level, the program has to some extents contributed to the formation of the new market for organic coconut sugar in the local level. For example, in Kulonprogo, three farmers have



Our dream is to have the price of coconut sugar equal to rice and now with 1 kilogram of coconut sugar we can buy 2 kilogram of rice... so the dream is no longer a dream.. and tappers are no longer live in rags but could also live in riches...
(Rawiyo, Kulonprogo)



²¹ Interview with Rawiyo, lead farmer in Kulonprogo

²² Coconut sugar Impact survey 2014, JRI/HIVOS

²³ Coconut sugar Impact Survey 2014, JRI/HIVOS and discussions with farmers in Banyumas and Kulonprogo, as well as report provided by LPPSLH

²⁴ Discussion with KSU Nira Satria, 2015

shifted their professions to only producers/collector/middlemen in the CPU level/cooperatives to be the collector/buyer for exporting companies. One even left the KSU and brings 500 farmers with him to form its own supplier group with support from the international buyer.

4.6. Changes in Social Aspects

As mentioned earlier within the value chain farmers establish the new relations with the middlemen. It is no longer a patron-client relationship rather as business partner that has more balance and open relationship that benefit both parties²⁵. It is not a secret that relationship between farmers and middlemen often very close and not limited to business transaction, especially in the village level. Farmers turn to middlemen for anything related to their household needs, from daily necessities, to school fee and community contribution for village events (party, death/funeral, wedding, etc.). Hence it involved both economy and social relations that make it difficult for farmers to get out of such strong bond.

The program changes this imbalance relationship to a fairer and more open linkage; especially with equal membership in the cooperatives, where both farmers and middlemen benefit fairly from purchasing price, saving and social insurance. Farmers that have out of debt have more confidence and have more recognition in the social ladder of village community. Not only they are proudly taking part in any social events but also could contribute financially to village development activities.

The program has given farmer new social status, and allow them to participate fully as community members. For example, in Purbalingga one of the tapper has been appointed as head of neighborhood association (Ketua RT). In case of Sakun, for example, he has been recognized as facilitator for organic coconut sugar production by the government not limited to his own village but in a wider area in and outside of the district even received award of recognition from the President. This certainly elevates his social status in the community. Another example is Nartam, who through his involvement in organic coconut sugar industry has awarded him as young entrepreneur of the year from British Council and give him to speak in the national as well as regional forum. In Kulonprogo, successful participation in KSU Jatirogo enable Sadali to gain more income, which in turn allow him to improve his living condition thereby boast his confidence to actively taking part in social activities in his village. Many other similar examples could be found in the villages where the program located, which gives evidence that the program has indeed give positive impact on the social relations among village community.

Another aspect that changes the social aspect of the farmers is the fact that by participating in the cooperatives farmers has a chance to benefit from insurance set aside from the cooperatives profit. Not only farmers received dividend annually but also has been guaranteed to be covered with health and life insurance should they face casualties in their work. In Kulonprogo, KSU Jatirogo allocated Rp. 342.5 million to cover insurance for 825 Farmers. In Banyumas, local government provided insurance coverage for tappers with benefit ranged from Rp. 5 to 10 million for 70,000 farmers throughout the district. This is way beyond the number targeted by the program, which is around 3000 farmers altogether (Banyumas, Purbalingga, Banjarnegara); also shows serious concern from local government to promote coconut sugar industry as the prime commodity to support local economy.

²⁵ Discussion with Rawiyo and FGD with farmers from KSU Jatirogo, Kulonprogo

5. Changes in Gender and Women Relations

The coconut sugar industry has a very clear division of roles even before the program implemented. Tapping the coconut sap has always been the role of men in the tapper households anywhere although there is one case where woman also take this position, which is very rare. Once the coconut sap was harvested the role then handed over to women.

While the gender division of roles is very much similar the introduction of organic certification through ICS and QMS has provided the new role to women. Not only women focus on the 'nira' cooking in order to produce the quality cast or crystal sugar but also it opens opportunity for women to take part as field inspector in the ICS team, as well as taking position in the cooperative management. By the time this report written, there are 11 young women out of 34 in the ICS team in Banyumas and around 29 women out of 62 ICS cadres/field inspector in Kulonprogo.

In the production side, women mentioned that although the production of crystal sugar need more time than cast sugar (half to 2 hours longer) the burden has not always born by women but is also shared with their spouse. For example, while women mainly responsible in cooking the coconut sap into liquid brown sugar, the drying process and grinding usually also involved men and their children. Women have more ample time to get involved in activities outside of their homes, such as active in the women group for religious or social affairs. In another word, producing the end product has been a family affair instead of only men or women responsibility. The study conducted by LPPSLH shows that from 22 stages of coconut palm sugar production women are responsible to carry out 9 stages while men 5 stages and another 8 stages can be handled by both women and men²⁶.

Women also got involved in the marketing chain of the coconut sugar; such as in Kulonprogo, from 42 middlemen involved in coconut sugar cooperatives, 12 are women. In Banyumas, the Director of P3R, the business unit of LPPSLH that deals with coconut sugar trading is also woman who once was also director of LPPSLH. In the buyer level, in both Kulonprogo and Banyumas, coconut sugar has created the new business women that actively purchase organic sugar for export, linking small producers with bigger national/international market (Inagro in Banyumas, Agritera in Kulonprogo).

Similar phenomenon also happened in the farmers' organization. Several farmer groups are led by women, in KSU majority of staff are women although the manager position are still taken by men with exception of Kulonprogo in which the manager and quality assurance officer are both women.

It is obvious that the introduction of organic certification/ICS in the coconut sugar industry has strengthened women position in the society. While it does not necessarily change the roles in the supply side it gives new meaning to the gender division of job in the overall value chain. Women have more confidence to take part in the whole process and have been empowered to gain access and control over production, economy as well as social aspects of their lives. In another word, the coconut sugar program has contributed significantly to the improvement of gender relations in the community.

²⁶ Report of Study on Women in Agriculture, LPPSLH 2010

6. Program Effectiveness

Financial investment

Cost effectiveness – direct investment for farmers’ strengthening

Due to the incomplete data it is difficult to analyze the cost and benefit in each of value chain as opposed to the fund that has been invested by Hivos throughout its program period. For example, while it is easy to have a rough calculation on the cost per capita that the project has allocated by referring to total amount of fund provided to partner organization and the number of farmers benefit from the program, there is no guarantee that accurate figures could be acquired in term of profit return or absolute increased of income and wealth in the households. This is partly due to the unavailability of baseline data recording the source of household incomes other than those acquired from the coconut sugar.

HIVOS has allocated € **236,598** from 2008/2009 to 2014/2015 to implement the program in partnership with Lesman/KSU Jatirogo and LPPSLH/P3R/KSUs. The rough calculation conducted by LPPSLH during the course of project duration (2008 – 2015) shows that cost per capita allocated from the project is Rp. **1,646,368** or **± € 110 (1 €= Rp. 15,000)**. This is including the cost for institutional support training, M&E and direct purchase of coconut sugar from farmers. The cost, however, has not yet accounted for the technical support provided through other parties that while benefit farmers not necessarily absorbed as direct expenditures to project beneficiaries. In term of benefit such small investment proven capable in generating additional income for beneficiaries, in which each investment of €110 resulted in additional income of around € 1,800/capita in average throughout the project period. Such figure could be considered as a sound investment in term of cost benefit ratio.

Support for strengthening organizational capacity

Throughout the project period HIVOS has allocated a substantial amount of fund to support the implementation, ensuring that the project could achieve its intended outcomes. Overall HIVOS allocated up to € 47,949 for consultancy services aimed at providing technical assistance to partner organizations in building their capacity for business management and increase market access in coconut sugar value chain.

Support for project evaluation

The coconut palm sugar program could be considered as highly maintained program with the number of evaluation conducted by external parties in the course of the 8 years period. From the documentation recorded in the organizational information system there have been 4 contracts for evaluations in 2011/2012 and 2 for impact assessment in the period of 2014-2015. The project evaluations help providing useful recommendation to adjust the program approaches and direction in alignment with the local context and priorities, thereby keeping the program on the right track to achieve its intended outcomes. The amount of fund allocated for the quality assurance, evaluation

and impact assessment throughout the project period is around € 36,971. This is a reasonable amount considering the length and size of the project.

Human Resources Investment – management effectiveness

The coconut sugar program in HIVOS has been managed with the light structure where Program Officer is the sole responsible person in ensuring the achievement of the deliverables, not only in the substance but also on the management and administrative aspects of the project. While this reflects efficiency in program implementation it has also creates confusion in task division. Each Program Officer/Manager is usually responsible to oversee more than 2 projects with more than 2 partners each and he/she should manage the whole aspect of the program, often their time spent in the administrative aspects rather than substantive program matters. Hence the support provided to partners is not always as expected.

In addition, the frequent turn-over of project staff also contributes to the lack of timely and effective responses to partner request for assistance and accompaniment. With 4 people takes turn in overseeing the project in the course of 8 years project period as well as change in the information management system within the organization in between, it is unavoidable for inconsistency in program support and poor recording of project knowledge and documentations.

The organization could benefit more from improved project management by setting up clear internal control framework that divides tasks and responsibilities between program and administrative support. Perhaps best to assign program support staff that will help the program officer/manager to handle the financial transaction, contract and other administrative tasks; hence release the burden from the program officer/manager to focus more on the substantive matters and providing more technical support to implementing partners in more timely and strategic way.

Overall, despite the glitz in management aspect of the program it is fair to say that the coconut palm sugar project that Hivos supported is a worthy investment and has a good performance in term of cost benefit ratio. It is efficient money wise and gives a certain level of flexibility in term of approaches and methods hence make it effective in addressing the different context and situation.

7. Conclusion – so what are the impacts?

Having identified the changes in all value chain above the questions then what could be concluded in relations to the impact of the organic coconut sugar program that HIVOS supported. This could be seen in various aspects of the program, which are: farmer level, organization level, partner organizations, markets, HIVOS and government.

a. Impact on the farmer level

Farmers' involvement in the organic certification program of coconut sugar has brought significant impacts to farmers' lives, namely:

1. Increased household income from coconut sugar with added value of the coconut sugar they produced (20 – 50%); this is partly due to the increased bargaining power of farmers against market (buyer/collector/middlemen);
2. Improved the agricultural practices concerning the coconut sugar production – such as maintenance of the coconut tree, reduced pesticide and chemical fertilizer use, crop diversification to grow under the shade of the coconut tree and give additional earning to the households;
3. Enhanced social status of the coconut sugar farmers from rags to riches: better income boosts farmers' confidence to take part in the social activities and enable them to contribute to the village affairs hence increased their social standing the village community.
4. Improved the living condition of the farmers' household with cleaner kitchen/production processes, better housing and better health condition;
5. Encouraged farmers to serve as trainer or facilitator that transfers their knowledge and skills in producing organic crystal sugar to other farmers outside of cooperatives/farmer groups or even outside of their area of residences;

b. Impact on the organization level

Organic coconut sugar program has provided the significantly positive impact to the farmer organizations in various ways:

1. Strengthened farmer groups in the supply chain side with the establishment of cooperatives (KSUs), ICS team, and CPU/warehouse;
2. Improved organizational management capacity of all elements of the organizations – more cohesive farmer groups, open and transparent management of cooperatives, clear division of roles between actors involved in the organization, etc.
3. Increased youth involvement in organic coconut sugar value chain; young people shows greater enthusiasm to take part in the industry following the steps of their tapper parents. More young men and women are involved in the organizations as cooperatives staff, ICS cadres and ICS officers; also in marketing as middlemen/collector or quality assurance officer.

c. Impact on the product quality

On the product side of the value chain the program has clearly created a tremendously positive impact that could last and sustained in the long run, as follows:

1. The quality of coconut crystal sugar produced in all target areas has met the organic standard set by the international organic certification body;
2. Farmers that produced the quality crystal sugar has also produced the quality cast sugar sought after by the local/national market for big industry such as soybean sauce producer – Indofood and Wings; although due to the limited availability of organic cast sugar such industry still willing to accept non-organic produces.
3. The use of organic standard in the coconut palm sugar tree has also improved the agricultural practices for other food crops, particularly rice and vegetable, thereby creating the new organic agribusiness industry that could increase farmers' income;

4. The adoption and implementation of ICS has inspired farmers and other actors in the coconut sugar industry in other area to also adopt similar practices albeit without certification, hence replicates the process without financial investment from the program;

d. Impact on the market

The coconut sugar certification program has also changes the market dynamic in the value chain as follows:

1. *Creating the new market opportunities* for farmers to trade their produces that is not limited to the hamlet or village level middlemen;
2. *Open opportunities for farmers to assume the new roles* - shift from farmer/tapper to middlemen/collector and serve as mediator between farmers and bigger market in the national level or with international buyer;
3. *Create opportunity cost for the traditional product of coconut palm sugar*: The good price of organic crystal coconut sugar increases the price of the cast sugar sold in the traditional market and gives better quality product that meet safety and health standard for food consumption;
4. *It drives buyer to gradually apply similar standard for other type of sugar needed in the food industry* to the point where the multinational food and beverage and household appliances company expressed interest to try out the application of organic certification in their supply chain for soybean sauce; this interest somehow still need to be pursued further for actual implementation.
5. *Created higher demand in the market for organic coconut palm sugar* that cannot be fulfilled by the farmers involved in the project hence encouraged middlemen and some of cooperative members to expand the ICS in several other districts producing coconut sugar. In many cases buyers are willing to buy the organic products even without international or national certificate.
6. *Creating the new side businesses for farmers and local traders* to engage in the supply of supporting materials for crystal coconut sugar processing. For example, a few farmers turn from producing sugar to trader for "laru" (mangostene skin and lime for coagulant), fire wood, saw-dust, 'pongkor', and necessary equipment for processing, including as well transportation to deliver crystal sugar to CPU/KSUs.
7. *Encouraged farmers to diversify the coconut sugar product* in order to reach the local market, which reduced the risk of market saturation in the international level, and allow farmers that have produced organic sugar to sell in the local market without requirement for international certification.

e. Impact on partner organization

The program deals with two core partners that characteristically different in nature, in which one is the organization established by relatively young intellectuals with social interest and high education background, and another one is community base organization established by farmers with lower education. As such the program has created a slightly different impact towards the growth of the organization.

In Kulonprogo, while in the beginning the partnership was established between HIVOS and local NGO once the cooperative established the support was provided directly to this farmer organization.

The program has created positive impact for cooperative but also Paguyuban Jatirogo (Kulonprogo Farmer Network):

1. Coconut sugar business has driven cooperative to take professional measures in managing their business and relations to international market. Even when the consequences caused the split of membership it does not stop cooperative to continue operational and perceived such fraction as creation of new market opportunities and capacity of farmers to take the new position as buyer. In another word the program has matured the cooperative and makes it resilient to organizational dynamic that might destroy the cohesiveness of relationship between farmers and KSU;
2. Professional management is in place that ensures members' interest is in the foremost of their consideration when dealing with market. Clear division of roles and responsibilities between cooperative management and Paguyuban leaders have been established, ensuring that cooperative work independently without Paguyuban interferences.
3. The cooperative has gained more confidence in running its operation and remains true to its nature to put members first. This is proven with the fact that they have chosen to engage only with buyer that is willing to provide long-term contract and include tax in their price. As a consequence the trading has been halted when buyer decided to hold the shipment due to some issues in the country of destination;
4. Different with Banyumas, this cooperative was established with solely farmers' initiative and derived from the need of farmers association to better manage the business aspect of their agricultural activities. It is true that in the beginning they have struggled to manage the organization to the point where Lesman and HIVOS has to assign consultant to help them clean up the business management aspect of the cooperative.

In Banyumas, the changes have not only affected the cooperatives but also the main partner LPPSLH and its business unit, P3R:

1. The recognition of LPPSLH as an institution that has strong expertise in the promotion of organic coconut sugar, which is proven with government request to facilitate the implementation of organic certification in two neighboring districts in Banglimascakeb with funding from APBD (district government budget);
2. The role of FO is no longer as field facilitator that provide training and conduct field inspection directly to farmers but has shifted into more technical assistance role. Farmers have taken over the role as ICS field inspector and training facilitator in majority places;
3. The program has enabled LPPSLH to generate organizational income with increased value of organic coconut sugar being traded via P3R; as per agreed clauses within the organization operating procedures P3R set aside 20% of its dividend to LPPSLH foundation annually.
4. P3R, which is originally established to market products from LPPSLH target farmers have fully operational as the limited trading company purchasing coconut palm sugar from other groups as well and has expanded its market from only one to more than 6 buyers.

f. Relations with government – policy and regulations

The coconut palm sugar certification has a tremendous impact on government policy in developing local economy. Following are the changing condition that will support the growth of organic coconut sugar in the future:

1. Recognition of coconut palm sugar as essential commodity for generating local revenue, which is proven with allocation of budget for expansion and promotion of organic sugar; fund for certification from local budget in impact location (Cilacap District);
2. Increased support from government to the development of coconut sugar cooperatives:
 - a. financial support from Bank of Indonesia in Kulonprogo for building the warehouse cost more than Rp. 400 millions,
 - b. support from Dinas Koperasi (Cooperative District Office) in Banyumas to build
 - c. support to build healthy kitchen and energy-saving stoves from Dinas Koperasi
 - d. support for processing units (oven for drying sugar, sieve, tray, etc.) from Dinas Perdagangan dan Industry (Office of Trade and Industry);
 - e. provision of insurance coverage from local government for coconut sugar tappers;
3. Support for connecting coconut sugar producers with market: invitation to present the products in the trade conventions/promotion arena in the local, national/regional and international fora;
4. Provision of technical assistance in the renewal of organic certification and replication to other districts;
5. Assistance in maintenance of coconut palm trees through regeneration – providing free seedlings for improved variety of coconut tree that could grow faster, shorter and produce more florets with higher content of coconut sap (nira);

g. Impact on value-chain of coconut palm sugar overall

The program has undoubtedly creates the positive impact in the overall value chain of coconut sugar. The most promising aspect of the program is the fact that there seems to be two different models come out as a result of the intervention strategy.

The first model is the intervention addressed directly to the beneficiaries, using the farmer cooperatives as the main partner and agent of change (see **Figure 5**). In this model, a relation between producer and market is more direct and transparent, in which farmers could market their product without another layer of intermediary. The traditional chain is still maintained but revitalized to be aligned with the development purpose of the cooperative; in this case the role of middlemen, while it is still exist in all level, it has been upgraded in the sub-district level to be an integral part of the cooperative as CPU (central processing unit). The responsibility to develop the program and build the capacity of farmers to adopt the ICS and as well as controlling the application of organic standard rest solely with cooperative and Farmer Association without intervention from the third party or NGOs;

The second model, the intervention is led by NGO partner (see **Figure 6.**), which serve as the provider of the seed capital for production, technical assistance to improve knowledge and skill in the production and facilitates the adherence to organic standard by activating the ICS team; NGO also facilitates the access to market through the establishment of business unit that connects producers with market. The advantage of using this model is the program implemented in more structured and systematical way, clear division of roles and responsibilities thereby allowing for more speedy expansion and growth of farmers organization in the village level.

Both models will work well considering the different context and specificity of the local environment. The first model, for example, might work best when there is a strong CBO already existed in the area; whereas the second model will work best if there is a strong NGO that already has good experiences working with farmer organizations in the local level.

8. Ways forward – lessons learned for sustainability and mainstreaming of organic coconut sugar industry

Notwithstanding the success in changing people lives in the coconut palm sugar industry it is important to consider as well various issues that could help in ensuring the sustainability and growth of this industry in the long run. These issues are necessary to ascertain the replication and scaling up of organic certification on the coconut palm sugar as envisioned by the program. The key issues include, among others:

1. **The importance of promoting good business sense and marketing strategy** that will help producers to have a comparative advantage in competitive market: Market demand is clearly the main denominator in driving farmers' commitment to engage in the production of organic coconut sugar hence it is important to prepare farmers/cooperatives to compete in the open market; further capacity development in business management and marketing is crucial to ensure farmers' readiness in entering the wider market;
2. **Strengthen the small producers' capacity to influence market and trading side of the coconut sugar value chain:** it is important to unite farmers/producers for strengthening their bargaining position against market. This could be done among others through the formation of The Association of Coconut Palm Sugar Producers, which will bring all farmers/producers in this industry together to deal with the production and market aspects of the coconut sugar.
3. **Consumer education for mainstreaming the benefit of organic coconut palm sugar for building the national market:** this is the next step to ensure continuity of the industry and commitment to organic standard; instead of promoting 'organic certification' it will be more strategic to promote 'healthy sugar' as it will be aligned with increased awareness amongst community at large on the importance of adopting healthier life style. Hence public campaign should be encouraged to promote the benefit of using coconut palm sugar creating higher demand in the local and national market for organic sugar although not necessarily internationally certified.
4. **Policy advocacy for the issuance of government regulations or programs to support the adoption and implementation of internal control system in a wider coconut palm sugar industry;** this should address government in the local, provincial and national level. For the industry to grow and expand it is undoubtedly important to ensure that government adopts the approach and practices with the issuance of policies and regulations conducive to the coconut sugar value chain. The program has attracted government interest to allocate fund and provides various in kind support; however, more deliberate effort has to be implemented to ensure that such support more strategic and integrated into the development agenda instead of sporadic in nature.
5. **Promotion of value chain models on coconut palm sugar industry:** The two different model of value chain could be introduced as alternative approaches not only in coconut palm sugar but also other agricultural commodities. Nevertheless, it is important to document all processes and identifies various factors that need to be adjusted to make such model more applicable and adaptable in different context. Feasibility studies and initial assessment on the local condition is prerequisite to the selection of appropriate model to be used. The choice of working directly with community base organization (CBO) or through local NGO has to be based on this insight;
6. **Improvement of data management/knowledge management and information system:** Should the program to be replicated or scaled up it is important to always have a baseline data as the starting point to measure whether changes did happened within the value chain due to intervention from external actors or partly due to internal drive from within communities. This lack of baseline data has been one of the factors that the impact study found it difficult to come up with un-bias and more objective assessment of the outcomes. Besides poor knowledge

management and information system make it challenging for outsiders to learn the best practices that HIVOS has acquired through its development support.

7. ***Building relationship with the private sectors:*** food and beverage industry is growing nationally and could be a potential market for coconut palm sugar. Until now most of F&B industry in country apply a very loose standard on the raw materials for their production due to the low standard of consumer demands and no strict requirement to follow health and safety criteria as required in the global market. Consumers have limited knowledge on the safety and nutritious facts of the food being consumed from such industry; however, with the raising awareness amongst consumers and government it is important to ensure that the big industry adopt a higher standard in their production. The use of cast coconut sugar has been essential in soybean sauce industry and for decades farmers via contract with middlemen have sold the product regardless the quality at the price
8. ***The importance of having strategic and efficient management system in place:*** The success of any program often depends partly on the management aspect and human resources capacity to deliver. While HIVOS has assigned a qualified personnel to manage the program lack of clarity on job division and internal control system has somewhat affected the ability to address the programmatic issues and cause strong reliance on external consultant for program quality assurance. Staff has been overload and overburden with not only responsibility to attend to the substantive issues of the program but also has to manage its financial and administrative aspect. It is important to apply internal control system within an organization instead of only imposing such standard to partner institutions. The clarity of job division and responsibilities will ensure the higher quality of program delivery and proper administration of the knowledge and information obtained from the interventions.

ANNEXES

Annex 1. Coconut Palm Sugar Project Status

BRIEF DESCRIPTION OF PROJECT STATUS BY AUGUST 2015

Reporting Period 2012 - 2015

	<u>Kulonprogo, Yogyakarta</u>	<u>Banyumas, Central Java</u>		
<u>Name of partner</u>	<u>LESMAN/ KSU Jatirogo</u>	<u>LPPSLH/ P3R</u>		
<u>Total funding (€)</u>	<u>109,565</u>	<u>127,033</u>		
<u>Number of locations</u>	<u>3 Subdistrict, 5 villages, 27 hamlets</u>	<u>7 Sub-districts, 19 villages</u>	<u>3 Sub-districts, 8 villages</u>	<u>5 Sub-districts, 14 villages</u>
<u>Implementing partner/beneficiaries</u>	<u>KSU Jatirogo Legalized 2008</u>	<u>Nira Satria Banyumas Legalized 2011</u>	<u>Nira Perwira Purbalingga Legalized in 2013 (237/BH/XIV.1/XII/2013)</u>	<u>Nira Kamukten Banjarnegara Legalized in 2013 (128/BH/XIV.20/VII/2013)</u>
Sales	• 1,840 tons	• 420 ton	• 120 tons	• 150 tons
Revenue	• Rp. 37.8 billions	• IDR 4,3 billions	• IDR 1,7 billions	• IDR 2,2 billions
# members	• 1,875 HH	• 1,250 HH	• 813 HH	• 701 HH
# management	• 12	• 16	• 11	• 7
ICS Team	• 62	• 33	• 20	• 8
Middlemen	• 42			
Member savings		• Rp. 180 millions	• Rp. 168 millions	• Rp. 115 millions
Community insurance	• Rp. 342.5 millions*)	• Rp. 75 millions	• -	• -
TC fund	• Rp. 570 millions**)	• Rp. 456 millions	• -	• -
Annual Profit	• Rp. 1,5 billions	• Rp. 756 millions	• Rp. 276 millions	• Rp. 195 millions
Organic sugar producers	• 2,375 HH	• 1255 HH	• 280 HH	• 130 HH
Support from government/ other stakeholders	Warehouse from Bank of Indonesia Yogyakarta	• Equipments from Dinkop province • Warehouse from Kemenkop and UKM • Production tools from	• 105 packs of crystal sugar processing unit from Dinperindagkop Banjarnegara • 20 units of healthy kitchen	• 20 packs of processing equipment from Dinperindagkop Purbalingga • 20 units of healthy

BRIEF DESCRIPTION OF PROJECT STATUS BY AUGUST 2015

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	<u>Kulonprogo, Yogyakarta</u>	<u>Banyumas, Central Java</u>		
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		Bappeda Banyumas • Coconut hybrid seedlings from Dinpertenbun Banyumas	from BAPPEDA Banjarnegara • 1 pack of processing unit from Government of Central Java Province • Resi Gudang klampok •	kitchen from Dinperindagkop Purbalingga • 900 Mangostene seedlings and organic fertilizers from Dinpertenhutbun Purbalingga • Paket UPH dan Prosesing

Notes:

*) Average Rp. 33,000/months/person via BPJS

**) Rough estimate for certification cost and field inspection – KSU Jatirogo paid organic certification cost independently since 2011

***) Rough calculation after 10% tax and other production cost (10%) from 3 years transaction;

Annex 2. List of Respondents for Impact Study on Coconut Palm Sugar Program

No	Name	M /F	Position	Address	Mobile
KULONPROGO – YOGYAKARTA PROVINCE					
1	Ngatijo	M	Chairman of Board of Director KSU Jatirogo	Suren, Sukoreno, Sentolo, Kulon Progo	081392962414
2	Susanto	M	Treasurer KSU Jatirogo	Nanggulan, Kulon Progo	
3	Th. Eko Setyowati	F	General Manager KSU Jatirogo	Tambak, Ngestiharjo, Wates Kulon Progo	08121530577
4	Hendrastuti	F	ICS Coordinator KSU Jatirogo	Turus, Tanjungharjo, Nanggulan, Kulon Progo	082138904201
5	Rahmadi	M	Manager CPU Warehouse Soropati	Soropati, Hargotirto, Kokap, Kulon Progo	087839786694
6	Tugiyono	M	Tapper	Keji, Hargotirto, Kokap, Kulon Progo	-
7	Paiman	M	Manager CPU- Warehouse D-08 Gunungkelir	Gunung Kelir, Jatimulyo, Girimulyo, Kulon Progo	085326485100
8	Jemiran	M	Tapper	Gunung Kelir, Jatimulyo, Girimulyo, Kulon Progo	
9	Mijo	M	Tapper	Gunung Kelir, Jatimulyo, Girimulyo, Kulon Progo	
10	Sumarlan	M	CPU Warehouse D-09 Banyunganti	Banyunganti, Jatimulyo, Girimulyo, Kulon Progo	085725843434
11	Byartono	M	CPU D-29 Sekendal	Sekendal, Hargotirto, Kokap	081392730307
12	Kamidi	M	Tapper	Sermo Tengah, Hargowilis, Kokap	-
13	Siwi	M	Tapper	Keji, Hargotirto, Kokap, Kulon Progo	-
14	Partiman	M	Tapper/Collector (middleman)	Keji, Hargotirto, Kokap, Kulon Progo	087838730213
15	Yanti	F	Middlewoman	Keji, Hargotirto, Kokap, Kulon Progo	087838730213
16	Sumitro	M	CPU D-31 Gunung Kukusan	Gunung Kukusan, Hargorejo, Kokap Kulon Progo	081903775811
17	Sukiran	M	Warehouse officer CPU Gunung Kukusan	Gunung Kukusan, Hargorejo, Kokap Kulon Progo	
18	Santosa	M	Production Officer CPU Gunung Kukusan	Gunung Rego, Hargorejo, Kokap Kulon Progo	085228273929
19	Giyati (Solikin)	F	Middlewoman	Gunung Rego, Hargorejo, Kokap Kulon Progo	
20	Lia	F	CPU D-24 Lukito	Turus, Tanjungharjo, Nanggulan, Kulon Progo	
PERKUMPULAN JATIROGO (JARINGAN PETANI KULON PROGO) INDUK KSU JATIROGO					
1	Raharjo	M	Coordinator Farmer Association Jatirogo	Tumpak, Giripurwo, Girimulyo, Kulon Progo	081392217678
2	Suprpti	F	Secreatry Farmer Association Jatirogo	Bleder, Sabdoharjo, Samigaluah, Kulon Progo	081326006821
3	Joko Santosa	M	Founder of KSU/Farmer Association	Demem, Wiimulyo, Nanggulan Kulon Progo.	-

No	Name	M /F	Position	Address	Mobile
4	Rawiyo	M	Founder of KSU/Farmer Association	Lendah, Kulon Progo	-
5	Siti	F	Founder of KSU/Farmer Association	Toyan, Wates, Kulon Progo	-
FGD (MALE) 24 AGUSTUS 2015					
1	Basuki	M	Tapper/Middleman	Segajih, Hargotirto, Kokap, Kulon Progo	087845738114
2	Suparman	M	Tapper	Soropati, Hargotirto, Kokap, Kulon Progo	081227061590
3	Partiman	M	Tapper/Middleman	Keji, Hargotirto, Kokap, Kulon Progo	-
4	Sanusi	M	Tapper	Keji, Hargotirto, Kokap, Kulon Progo	082138222257
5	Watono	M	Tapper	Teganing I, Hargotirto, Kokap, Kulon Progo	081392404058
6	Sadali	M	Tapper	Segajih, Hargotirto, Kokap, Kulon Progo	081229511822
7	Wagiyanto	M	Tapper/Middleman	Teganing 1, Hargotirto, Kokap, Kulon Progo	-
8	Zainal Arifin	M	Tapper	Sungapan 2, Hargotirto, Kokap, Kulon Progo	085654215874
9	Sukadi	M	Tapper	Sungapan 2, Hargotirto, Kokap, Kulon Progo	082152762101
10	Yasmani	M	Tapper	Soropati, Hargotirto, Kokap, Kulon Progo	-
11	Ngatimin	M	Tapper	Soropati, Hargotirto, Kokap, Kulon Progo	087738695141
12	Bejo Alfianto	M	Tapper	Soropati, Hargotirto, Kokap, Kulon Progo	082243800944
13	Rahmadi	M	CPU-Warehouse	Soropati, Hargotirto, Kokap, Kulon Progo	087839786694
14	Sugiman	M	Tapper	Teganing 3, Hargotirto, Kokap, Kulon Progo	-
FGD (FEMALE) 24 AGUSTUS 205					
1	Musinah	F	Tapper	Teganing 3, Hargotirto, Kokap, Kulon Progo	
2	Rantiyem	F	Tapper/Middlewoman	Sungapan 2, Hargotirto, Kokap, Kulon Progo	
3	Nur Arifah	F	Tapper	Sungapan 2, Hargotirto, Kokap, Kulon Progo	
4	Sukinem	F	Tapper	Soropati, Hargotirto, Kokap, Kulon Progo	
5	Sarini	F	Tapper	Soropati, Hargotirto, Kokap, Kulon Progo	
6	Parmi	F	Tapper	Soropati, Hargotirto, Kokap, Kulon Progo	
7	Purwanti	F	Tapper	Keji, Hargotirto, Kokap, Kulon	

No	Name	M /F	Position	Address	Mobile
				Progo	
8	Suprihatin	F	Tapper	Teganing 1, Hargotirto, Kokap, Kulon Progo	
9	Erna Watiningsih	F	Tapper	Teganing 1, Hargotirto, Kokap, Kulon Progo	
10	Surani	F	Tapper	Segajih, Hargotirto, Kokap, Kulon Progo	
11	Sri Yuni	F	Tapper	Segajih, Hargotirto, Kokap, Kulon Progo	
12	Sumilah	F	Tapper	Teganing 3, Hargotirto, Kokap, Kulon Progo	
BANYUMAS, CENTRAL JAVA PROVINCE					
LPPSLH, COOPERATIVES AND GOVERNMENT CONTACT					
	Ario Bangkit	M	Director LPPSLH	Purwokerto	
	Kukuh Haryadi	M	Program Manager - LPPSLH/HIVOS Partnership	Purwokerto	082136076869
	Endah Puspitosari	F	Director P3R	Dusun Mindik RT 07/V, Cilongok, Cilongok, Banyumas	
	Mukhlas	M	FO Banyumas LPPSLH	Purwokerto	085747739375
	Alfa Edison	M	Former Director LPPSLH	Purwokerto	
	Nartam Andre Nusa		Director KSU Nira Satria	Cilongok, Perdi village RT 01/03, Banyumas	
	Zaenal Abidin		General Manager KSU Nira Satria	Cilongok, Perdi village RT 01/03, Banyumas	
	Kuntoro		ICS Coordinator KSU Nira Satria	Cilongok, Perdi village RT 01/03, Banyumas	
	Hartanto Wijaksono		FO LPPSLH Banyumas/Kebumen	Purwokerto	081327700066
	Atun Rohayat		FO LPPSLH Banyumas	Purwokerto	081327700066
	Samsul Arifin		Director KSU Nira Perwira	Candinata Village, Purbalingga	
	Afianto		ICS Coordinator KSU Nira Perwira	Candinata Village, Purbalingga	
WOMEN GROUP - BINTANG 4, RANCAMAYA VILLAGE, CILONGOK, BANYUMAS					
1	Samsiah	F	Sugar processor	Rancamaya Village, Cilongok, Banyumas	
2	Mahmudah	F	Sugar processor	Rancamaya Village, Cilongok, Banyumas	
3	Dasirah	F	Sugar processor	Rancamaya Village, Cilongok, Banyumas	
4	Naisah (ibu muda)	F	Sugar processor (young mother)	Rancamaya Village, Cilongok, Banyumas	
5	Purwanti (Ibu Muda)	F	Sugar processor (young mother)	Rancamaya Village, Cilongok, Banyumas	
6	Kartisem, RT 01/ Rw 4	F	Sugar processor	Rancamaya Village, Cilongok, Banyumas	
7	Dasinah	F	Sugar processor	Rancamaya Village, Cilongok, Banyumas	

No	Name	M /F	Position	Address	Mobile
8	Sumini	F	Sugar processor	Rancamaya Village, Cilongok, Banyumas	
9	Tarbiyah, RT 01/Rw 4	F	Sugar processor	Rancamaya Village, Cilongok, Banyumas	
WOMEN GROUP JATISABA VILLAGE, CILONGOK, BANYUMAS					
1	Tiwen	F	sugar processor	Jatisaba Village, Cilongok, Banyumas	
2	Tarwen	F	sugar processor	Jatisaba Village, Cilongok, Banyumas	
3	Tugiyah	F	sugar processor	Jatisaba Village, Cilongok, Banyumas	
4	Rumini	F	sugar processor	Jatisaba Village, Cilongok, Banyumas	
5	Ritem	F	sugar processor	Jatisaba Village, Cilongok, Banyumas	
6	Nakyah	F	sugar processor	Jatisaba Village, Cilongok, Banyumas	
7	Rimah	F	sugar processor	Jatisaba Village, Cilongok, Banyumas	
8	Yuni Astiti	F	sugar processor	Jatisaba Village, Cilongok, Banyumas	
9	Rakiwen	F	sugar processor	Jatisaba Village, Cilongok, Banyumas	
10	Tursiah	F	Group Leader	Jatisaba Village, Cilongok, Banyumas	
FARMER GROUP NIRA SEJATI, PANUSUPAN VILLAGE, CILONGOK, BANYUMAS					
1	Dul Rakam (66)	M	Tapper	Panusupan village, Cilongok, Banyumas	
2	Kuswan (50)	M	Tapper	Panusupan village, Cilongok, Banyumas	
3	Muchyidin (23)	M	ICS Village team/tapper	Panusupan village, Cilongok, Banyumas	
4	Rakim (64)	M	Tapper	Panusupan village, Cilongok, Banyumas	
5	Catim,	M	Tapper	Panusupan village, Cilongok, Banyumas	
6	Slamet (55)	M	Tapper	Panusupan village, Cilongok, Banyumas	
7	Abdul Salam (44)	M	Tapper	Panusupan village, Cilongok, Banyumas	
8	Layarto	M	Tapper	Panusupan village, Cilongok, Banyumas	
9	Sudarno (45)	M	Tapper	Panusupan village, Cilongok, Banyumas	
10	Tarlam (60)	M	Tapper	Panusupan village, Cilongok, Banyumas	
11	Tasam (73)	M	ICS team hamlet/Tapper	Pakujati Hamlet, Panusupan Village, Cilongok	
HIVOS ROSEA AND OTHER STAKEHOLDERS					
1	Ulfa Wulandari	F	Program Manager	Jl. Kemang Selatan XII/1, Jakarta Selatan, Jakarta	
2	Miranda	F	Program Manager	Jl. Kemang Selatan XII/1, Jakarta Selatan, Jakarta	

No	Name	M /F	Position	Address	Mobile
3	Rini Hanifa	F	(former Program Manager)	Jakarta	
4	Panca Pramudya	M	Former Program Manager	Jakarta	
5	Caecilia A. Widiastuti	F	Executive Director PT. Damar Jabis	Jakarta	
6	Ayu	F	Business Development Manager - HCC		
7	Sarijo	M	Director Improsula (former director of LESMAN)	Jl. Magelang - Yogyakarta	
8	Joko Budi Santoso	M	Head of Economic Affair Bappeda Banyumas	Bappeda District Office, Purwokerto - Banyumas	