

1. Sustainable Forest Management At PT. Sari Bumi Kusuma (SBK)

What are you asked to do?

1. Read the case studies provided – 10 minutes
2. Try to answer the following questions through discussion with your group – 40 minutes
 - a. What are the issues in terms of environment and the case studies delivered (a problem or reaction) (the pressure on resources of water / energy / fuel, land use change, degradation, sustainable issues, climate change adaptation – weather climate, climate change mitigation – energy efficiency)?
 - b. What is the impact of such issues (as seen in point a) to the livelihood / descent work (income levels, working conditions, access to food / home, sources of income, employment opportunities, changes in skills, access to energy)?
 - c. Are there other groups that are viewed from different sides (rural vs. urban, gender, rich vs. poor, indigenous communities, geographic challenges)?
 - d. What actions are or could be proposed to include the identified impacts that address employment and environment?
 - e. What are the interests and roles of different actors in all of these actions (government, private sectors, working groups, indigenous communities, community organizations)?
 - f. Based on the issues identified in point a, presumably, what kind of green jobs may arise?
 - g. Based on the type of work of green jobs that may be created, think about what action to be taken to anticipate it?
 - h. Based on your experience, what is your opinion on the existing case studies?
3. Identify a person from your group who will report back to the plenary – 5 minutes per group – about the following matters:
 - a. Summary of changes described
 - b. What is the impact on people's lives (for workers and employers)?
 - c. What is the most promising action to incorporate these issues?

4. Discussion of 3 cases (plenary) – 20 minutes

Materials available: flipchart, coloured pens and coloured post-its

The total time available for the whole exercise is 1 hour and 25 minutes.

PT. (Sari Bumi Kusuma) SBK was established legally on November 10, 1975. In 1979, SBK received the concession of an area of 270,000 ha from the government for a period of 20 years, located in two provinces, namely West Kalimantan and Central Kalimantan (Decree No. 666/Kpts/UM/10/1979). The first Forest Concession is carried out in accordance with the Indonesian Selective Cutting and Planting system (TPTI).

In 1998, the company even got the concession extension in accordance with those proposed by SBK. In this case, the government provided the company a new license for the concession period of 70 years (1998-2068). Such permit is stipulated in the Decree of the Minister of Forestry No. 201/Kpts-II/1998 issued on February 28, 1998. This Decree provides SBK with an Industrial Plantation Forest Concession (HPH / IT) for an area of 208,300 ha, where 61,700 ha of the area is reclassified as protected forest. In this new concession, SBK was demanded to apply Cutting and Line Planting (TPTJ) System. This system is obligatory for the extension of such concession when the new SBK permit is issued, requiring the company to practice the enrichment plant in the clear-cutting path. This is the reason why the company received the Industrial Plantation Forest Concession (HPH / IT) for 70 years, which includes the first cutting cycle and planting for 35 years, and an additional 35 years for harvesting the trees planted. This provides SBK with an exception of long-term ownership, which is much longer than a generally applicable Forest Concession, which normally applies only for 20 years.

The concession area is divided into two blocks:

- Seruyan Block, with a total area of about 147,600 ha, as an FMU (Forest Management Unit), which is evaluated at the current assessment. Until mid-2002, it was part of Kotawaringin Timur District, Central Kalimantan. However, since June 2002, it has become part of Katingan District and Seruyan District.
- Delang Block, with a total area of 60,700 ha, located in Kotawaringin Timur, West Kalimantan.

Both blocks are located in two different administrative areas, creeks, and management units; therefore, the two blocks represent two different FMUs, in accordance with the SBK management, and they may, theoretically, be operated by two different companies. The company therefore chose to assess the block separately, starting from Seruyan Block. The scope of the certificate is only for Seruyan Block, Central Kalimantan

Use of Certification Standard

The standard used in this assessment is the SmartWood Interim Standard for the assessment of forest management in Indonesia issued on December 2006.

Stakeholder Consultation Process

There are three objectives of the stakeholder consultation strategy on the assessment, including:

- 1) To ensure that the public is aware and well-informed about the assessment process and its purposes;
- 2) To assist the field assessment team in identifying any potential issues, and,
- 3) To provide wider opportunities to the public to discuss and establish the assessment findings.

This process is not just to notice to the stakeholders, but if possible, to have complete and meaningful interaction with the stakeholders. The process of interaction with these stakeholders does not stop only after the site visit, or after the assessment, but continued after the certification decision is made.

SmartWood at any time expects any comments and inputs regarding any certified companies and this feedback often becomes the basis for its field assessment.

In the case of PT. Sari Bumi Kusuma, before the actual assessment process, stakeholder consultation public documents have been made and distributed via email, fax and mail. Based on inputs from companies, local NGOs and others, an initial list of stakeholders was created and a notice to the public was distributed. This list is also the basis for the assessment team to select those to be interviewed (face to face or via telephone or email). Public meetings were also held and a written survey was distributed to gather inputs from the stakeholders.

Legislative and Government Regulation Contexts

Kalimantan's forests are rich in species and commercially valuable and have undergone intensive timber exploitation during the last three decades. The quality of logging activities and forest

management all over Kalimantan in general is highly insufficient in complying with the international standards. This has led to forest degradation, loss of biodiversity and illustrates the gloomy prospects for forest sustainability. Forests become damaged and depreciated due to poor land management, illegal logging and forest fires. The High Conservation Value Forest (HCVF) faces several threats, which can be reduced with responsible forest management. Furthermore, threats to forests are exacerbated by the political and legal deadlock situation that conditions the access to forest resources to be a virtual free-for-all.

Indonesia in the midst of a long political transition results in uncertainty of land tenure and natural resources that will be passed from central government to regions. The significant authority has moved to the district level in accordance with the Regional Autonomy Law, but doubts persist, where this authority ignores the provisions of the applicable national law. In the previous Indonesia's political system, more than 70% of the total forest areas were controlled by the Ministry of Forestry and the Minister had a clear authority to grant an exclusive timber harvesting right to private companies. The Forestry Law of 1967 and the previous political system do not recognize the indigenous land tenure system that cultivates forests in traditional manners.

Devolution of some powers to the provincial and district levels is intended to make forest management more effective. However the authority is neutralized by the issuance of Government Regulation No. 34/2004 regarding Forest Use and Management which sets the obligation to follow the forest certification program for companies with a view to an extension of their concessions, or obtain new concession rights. This rule was criticized by many stakeholders and subsequently revised by Government Regulation No. 6 of 2007 set out on January 2007. The whole regulations in the field of forestry, including forest concession permits, refer to the new government regulations on forest use and management.

The Main Objectives of Forest Management Include:

- *Top priority:* Optimization of natural forest resources for the achievement of sustainable social and economic benefits to the maximum.
- *Second priority:* Sustainability of log production for the industrial needs in Pontianak.
- *Other Priorities:* Promoting good relations with communities living in and around forest concessions to protect the traditional rights and contribute to development, health and welfare of local communities, maximizing the involvement of local workforce to promote

economic development, and conserving and protecting the values and functions of forest conservation.

Forest Composition:

The mixed hill Dipterocarpus forest is dominated by Shorea and Dipterocarpaceae families.

Description of Silvicultural System:

SBK implements the TPTII (Intensive Indonesian Selective Cutting and Planting) system which includes provisions as follows:

1. 25-year rotation cycle.
2. The diameter limit is greater than or equal to 40 cm.
3. Systematic cultivation of natural species with the planting intensity of 200 seedlings per hectare.
4. Tight schedule for weeding and maintenance of stands to ensure the success of endurance and growth of seedlings planted.
5. The Pohon Plus Program to identify quality seed trees and seed stocks.
6. License 70 to ensure adequate security of tenure to apply an intensive silvicultural management system.
7. Intensive monitoring of the growth of seedlings planted or growing naturally for the purpose of result modeling.

2. Community-Based Ecotourism - Indecon

The case study will look at what are the necessary skills for a community to be able to develop a community-based ecotourism. Instead of looking at a specific occupation in a ecotourism operation entity, a broader approach is applied. Indecon foundation is a local non-governmental organization that focuses on community based eco-tourism. Started in 1995, Indecon was initiated by Conservation International Indonesia, The Institute for Indonesia Tourism Studies and Bina Swadaya Tours. Indecon found that ecotourism is a comprehensive tool to conserve biodiversity and to involve local communities and organization in a participatory way to derive maximum benefits in a sustainable way. Indecon believe that ecotourism has a potential to improve the quality of the environment, cultural values, local community prosperity and quality of human relation in general. Since 1995, Indecon have facilitated various ecotourism sites development for ecotourism stakeholders in Indonesia, mainly by conducting research on the ecotourism potential and later training the stakeholders to develop and provide ecotourism services.

In setting up community-based ecotourism, the local communities first must have a strong bond internally or have a good organizational skill. After the institutional arrangement was set up, then the communities must be able to comprehend the knowledge of environmental and ecological sustainability and tourism business and later combine the two concepts. There are four aspects that need to be considered in developing a community-based ecotourism site: 1) product development, 2) capacity building on organizational or institutional strengthening, 3) internal policy that influences the site and outside the site, and 4) financial – micro finance including the benefit distribution between communities' members.

Following those four aspects, Indecon has five focuses in its activities:

1. Research and Planning

2. Capacity Building

3. Destination Development

4. Marketing

5. Monitoring and Evaluation

Improving technical capacity is one of the key success factors in achieving a sound and sustainable ecotourism management. Empowerment will not only be enhanced at local community level, but more importantly at the level of tourism developer, program manager and decision maker. The increase of both human resources and organization capacity (including skill and knowledge) is one of Indecon's priorities.

A series of trainings were conducted by Indecon. Some of the training activities are:

1. **Ecotourism Training for The Trainers.** A ten days training to strengthen ecotourism planning, development and monitoring.
2. **Ecotourism Perspective Training.** A four days basic ecotourism training, to increase ecotourism knowledge.
3. **Ecotourism Development and Marketing.** A three days basic ecotourism planning and development combined with field visit.
4. **Ecotourism Interpretation Training.** A two days training to increase the interpretation knowledge and skill.
5. **Ecotourism Guide Training.** A four days training to develop guide skill and knowledge.

6. **Ecotourism Field Practice Training.** A seven days training in ecotourism theory and its implementation in the Field, especially for community based participation issues, business and interpretation.

Those trainings provided by Indecon and funded by several donor agencies or government. The skill missing are identified in the beginning stage of the cooperation when Indecon conducted assessment on what are the potential and the weakness of the targeted communities.

One of Indecon's sites is Tangkahan village in Gunung Leuser national park, Aceh province. In Indonesia national parks are managed by the national park office under the Ministry of Forestry. Indecon initiated collaborative management between the community of Tangkahan village and Leuser national park so that the community will collaborate with the park management to protect the park. Before the collaboration existed, many villagers worked as illegal loggers encroaching the forest within the park boundaries. With the collaboration, the community was directed to provide eco-tourism services in the national park. While the park management is still held by the national park office, the eco-tourism activities are conducted by the communities. Villagers were given training to be the eco-guides. Not only are the guides able to show exotic places and flora and fauna living in the park, but the guides also taught to practice eco-sustainable behaviors and transfer the knowledge to the tourists as well.

In Tangkahan case, not only the illegal loggers were given awareness to protect their ecosystem, but also were given an alternative income mean to support their livelihood. Off course, the income as eco-guide hardly competes with selling illegal woods, but when one incorporates the external cost of ecosystem degradation and personal safety, then being a farmer plus eco-guide is a good option. The illegal logging activities do not only harm their environment, but also personal safety and often lead to social unrest among villagers.

3. CNG Buses in India

Introduction

Pollution due to the use of petroleum products for the purpose of transportation is an ever increasing problem in modern societies. Compressed Natural Gas (CNG) is an alternative fuel for automobiles and is also the cleanest transportation fuel available today. It is claimed that apart from being less hazardous, CNG is also environment friendly, can help in reducing the levels of pollutant emissions and is cost effective.

Delhi was the first state in India where the entire public transport system switched to CNG run vehicles. Consequently, transportation related occupations needed to be “greened”, including mechanics of CNG run vehicles. Other jobs have been created, mainly in CNG filling stations.

In July 1998, the Delhi government was directed by the Supreme Court to convert its diesel-fuelled public buses - the *Delhi Transport Corporation* buses - into compressed natural gas (CNG) buses by 2001. At that time, there were only 350 Delhi Transport Corporation buses and 200 private buses serving the population of Delhi. This number considerably increased since then. According to the Delhi Government statistics there are 3,559 CNG buses and by mid-2010 the government would introduce another 3500 examples. Additionally, there are 12,000 taxis and 55,000 CNG run auto rickshaws, all together substantially contributing to a steady improvement of the air quality in the city. Indeed, the CPCB report concludes that from 2000 to 2008 SO₂ dropped by 57%, and CO by 72%. The success-story of Delhi's green buses made the Supreme Court of India decide to apply the same directives to other 9 Indian cities.

The shift from a diesel-based mass transport system to CNG has involved new technologies essentially regarding modifications of the engines. The largest CNG manufacturing companies providing CNG buses to Delhi are Ashok Leyland and Tata Motors. The maintenance of the buses will be carried out by the respective companies from which the buses are being bought for a period of 12 years. A new labour market has been created and proper training and retraining will eventually lead to job placement.

There are roughly two types of professional profiles involved in the greening of the urban public transport system, namely:

- people employed in CNG filling stations

Currently, there are 367 CNG filling stations in Delhi, and during the year 2010 another 100 are going to be added. In all of the existing stations there are 8 filling points. Each of them is managed

by two persons. These stations run round the clock. In addition to these workers, there are 2 security guards round the clock. Thanks to the CNG buses initiative, in total about 32 to 34 new jobs are being created at each of these stations on a contractual basis, amounting to 12,500 additional jobs in filling stations only.

- mechanics

They are primarily involved in the maintenance and servicing of the vehicles. Three types of CNG-mechanics can be distinguished: the mechanics for taxis and private cars, auto rickshaws mechanics, and the bus mechanics. Most of them shifted from the existing diesel based vehicles to CNG systems. From interviews done with 23 mechanics, an estimated 100,000 CNG mechanics in and around the city have shifted to CNG.

Challenges

Skill gaps have been identified for proper maintenance of the vehicles (mechanics). The Delhi Transport Corporation has not considered this a major problem in the medium term seen the 12-year agreement with the producing companies of the vehicles. As for privately owned buses, the lack of skilled mechanics poses a problem today. Therefore there is a need for quality training institutions that train mechanics able to maintain and fix the CNG engines and systems. But the existing TVET infrastructure is inadequate for meeting the current, let alone future, demand.

The lack of institutional training has opened up the opportunity for mushrooming of non-formal training in garages and mechanic shops. These entities suffer from proper quality assurance. In addition, several companies such as Hundai, Maruti and Honda have started the production of variants of existing CNG systems, further increasing the need for proper professional training.

Buses Catching Fire - 9 incidents in one month only

The Delhi State Government got a total of 950 buses from Tata Motors in 2009. As per contract, Tata Motors is responsible for the maintenance of these buses for the next 12 years. However, during the month of December 2009, nine buses caught fire. Causes were mainly technical snags. Newspaper reports suggested that short circuits made CNG buses catch fire, while others indicate manufacturing problems as primary cause for the incidents. The government believes that inappropriate infrastructures and an important lack of skilled workers are responsible for unsafe mass transport vehicles.

Sources: <http://timesofindia.indiatimes.com/city/delhi/Tatas-fined-Rs-4-crore-for-DTC-bus-fires-/articleshow/5338529.cms> &
http://www.telegraphindia.com/1091215/jsp/nation/story_11865158.jsp &
<http://www.hindustantimes.com/News-Feed/newdelhi/Another-DTC-bus-catches-fire-manager-suspended/Article1-490341.aspx>

Opportunities and responses

Because the CNG vehicles use compressed gas, which is explosive, maintenance and thus properly trained mechanics is a fundamental requirement for shifting away from traditional fuel. This has sadly been proved by the incidents that occurred in December 2009 (see box).

Still, the government of Delhi has not yet institutionalised training mechanisms to respond to identified skills needs. Industrial Training Institutes (ITIs) in the National Capital Region have started to train CNG mechanics, but a minimum number of years of formal schooling is required for admission. Most mechanics do not comply with this request. Other admission criteria should be introduced, focussing on aptitude rather than schooling, as most mechanics do have basic maintenance skills, but miss the knowledge and techniques needed for maintaining and repairing CNG engines.

Apart from changing admission requirements, also the training facilities need to be scaled-up. The number of training institutes in and around the National Capital Region is inappropriate and not proportional to the number of requested training and re-training programmes.

Public-private collaboration can be part of the solution. Through the Corporate Social Responsibility of CNG buses producing companies skills gaps can be addressed. In Gujarat for example, *Gujarat Gas Corporation Limited* has successfully trained its personnel on how to maintain CNG vehicles. As such, no further training infrastructure from the government was needed, and high quality training services were provided. Seen the presence of large industrial units (Honda, Maruti,...) around the National Capital Region a similar public-private solution may be fruitful.

In future, quality servicing will be key for a vehicle mechanic. As the norms on air quality are getting stricter, proper training of mechanics is essential to successfully realise the transition to a low-carbon and environment friendly public transport system.

4. Climate field school for farmers

It is inevitable that agriculture is the most affected sector by climate change. Irregularity of season, the short rainy season but with high rainfall, drought, increased pest populations are threats in this sector.

With workforce in agriculture, forestry, and fishery comprising 40% of the total workforce (Suskernas, 2008), it is very important to prepare the sector to adapt to climate change impacts. Without the necessary improvements in terms of human capacity or technology, this sector will not be able to manage the risks generated by the impacts of climate change.

As part of a larger strategy in dealing with climate change impacts, the Ministry of Agriculture started an initiative to increase the adaptive capacity of farmers to the impacts of climate change. In spite of the absence of shift from the major employment in this sector, this case study is categorized as a change in the green structure and control of needs since the initiative can be regarded as an effort to restructure the sector in order to be able to manage the risks of climate change by improving the skills of adaptation by farmers.

Before the issues of climate change, the employment sector has undergone a shift as a result of industrialization and urbanization. With the expected impacts of climate change, the employment sector possibly shifts as well.

The initiative is called the Climate Field School for Farmers or *Sekolah Lapangan Iklim*, abbreviated as SLI. In 2002, SLI started its activities at Indramayu District. However, recently the Climate Field School has been conducted in more than one hundred districts all over Indonesia, with ten or even a hundred farmers per district. The Ministry has targeted to continue and improve its implementation in several districts to reach out to all districts in Indonesia. The funds come from the ministerial budget and the local government budgets.

Currently, the use of climate forecast information is very low. In Indramayu District, as a vulnerable area to suffer from the events of El Nino Southern Oscillation (ENSO), the farmers are always suffering from drought and floods every time El Nino or La Nina occurs. Some of the reasons are that the farmers have difficulty in *understanding the climate forecast information* that has the possibility and no *deployment of an effective system of the climate forecast information* to the farmers. The farmers also do not realize the economic value of the climate forecast information. As a consequence, the level of farmers' adoption of the climate forecast information is very minimal and they do not have the capacity to adjust their short strategy against the climate forecast. To increase

the farmers' adoption of the climate forecast information, their knowledge of climate and its application should be improved (Boer, 2006).

The Climate Field School uses the network facilities available in the Ministry of Agriculture for other problems, such as water storage (field school for water saving or *Sekolah Lapangan Hemat Air*) and Pest Control (field school for pest control or *Sekolah Lapangan Pemberantasan Hama Tanaman*). The network connects the Ministry staff and farmers. Ministry employees are called as field instructors and pest monitors, whose job is to work in the field to assist farmers directly in terms of knowledge transfer and capacity building. Prior to 2002-2003, the knowledge does not include the climate information.

SLI is primarily aimed at increasing the capacity of farmers to be able to interpret weather and climate data (historical and forecasts) and use the data in their decision making process to achieve better results. In the SLI field instructors and monitors act as a teacher and coach. These coaches have been given sessions Training of Trainers (TOT) at the national and provincial level. Then in the field they modify the training materials into local habits or character and use them for training to farmers.

SLI is generally performed once a year in twelve sessions to farmers before the beginning of planting season prior to rainy season. To date, there are about 500 SLI units during its implementation from 2003 to 2008 with 20-25 farmers' involvement in each SLI.

5. Integrated Solid Waste Management - PT Navigat Organic Energy Indonesia (GALFAD), Bali

This project is a project developed by PT Navigat Organic Energy Indonesia (NOEI) in order to implement the Clean Development Mechanism (CDM). This project aims to build a waste management facility called GALFAD, which is the integration of waste management in a way of Gasification, Landfill Gas and Anaerobic Digestion (GALFAD). The integration of this technology is intended to process and generate energy from the existing waste. Currently, Suwung Landfill (Final Disposal) receives about 800 tons of waste per day, whose numbers will certainly increase per year.

The facility to be built is expected to generate energy by:

1. Retrieval of waste disposal gas extracted from the landfill itself.
2. Retrieval of biogas extracted through anaerobic digester, processing organic wastes with high humidity
3. Pyrolysis gasification of dry organic waste

The retrieval of energy made will be used to supply power to the local grid. By such action, the project will contribute to the reduction of greenhouse gases in both directions. The first is to solve the methane occurring in landfills when the project does not exist. The second is the generation of electricity by using waste (traditional fuel sources), to replace fossil fuel previously commonly used.

Several Processes Involved:

Waste Separation

The existing waste is separated into 'wet waste' and 'dry waste' based on its size. Materials containing smaller organic waste with a higher proportion are included into 'wet waste'. The greater materials will be categorized as 'dry waste', usually in the form of yard waste, paper waste and wood waste. The separation is done using a tool (rotary screens) and also by manual separation for rougher materials.

Pyrolysis Gasification

Pyrolysis Gasification is a combination of two processes, namely, Pyrolysis and Gasification. Pyrolysis process will turn dry waste into hydrocarbons with lower molecular weight of 'pyrogas'. Dregs (waste) of the pyrolysis process are then fed into the gasification unit, where the residue is then broken down into methane, carbon monoxide, and hydrogen.

The energy of pyrogas and water-gas is then retrieved through the isothermal combustion process inside the oxidation unit with a high temperature.

Recovery System for Landfill Gas

The Landfill Gas Collection System consists of vertical wells drilled into the landfill cells. The landfill structure system will allow the reuse of landfill space when the waste becomes inert until the landfill gas (LFG) retrieval system can be physically minimized.

LFG will then be inhaled in a gas supply unit, which is a package of equipments including blower, filtration, water collection equipment, and drying by gas, chillers and other related instruments and controls. The Unit collects and delivers the gas into the machines.

Anaerobic Digestion

In the anaerobic digestion process, waste shall be put into a digester where anaerobic bacteria convert the existing waste into methane, carbon dioxide and other gases in small quantities. The environment inside the digester must be made in such a way that decomposition will take place faster than the natural process, thus making the waste volume reduction takes place very quickly. The digester is a vacuum bioreactor with the minimum possibility of methane leaks.

Power Plant

This project will play an important role in technology transfer to Indonesia, where most of the municipal solid waste is disposed of, to a landfill. If successful, this project will be the first project in this country that offers an advanced solution in the management of municipal solid waste.

Activities and impacts that may arise if the technology is adopted:

- i. Providing alternative energy derived from other energy sources. The use of biomass, one of the renewable traditional fuel sources, is consistent with Indonesia's energy policy to increase the use of this type of energy to 5% of the total energy supply in 2020.
- ii. The Municipal Solid Waste Management. The project will have an impact on improving the management of municipal solid waste. By processing the waste, the project will result in a better environment in the vicinity of landfills, reduce the risk of health problems, reduce waste odor and improve sanitation, which are a few other advantages. This project will reduce the concentration of methane in the atmosphere, thus reducing the risk of fatal fires and explosions. In addition, reduction of waste volume will also reduce the risk of waste landslides.

- iii. Use of New Technology. This project is the first in Indonesia, which adopts advanced technology for solid waste management, as a proven technology in industrial countries. This project will contribute to the importance of technology transfer in terms of *know-how*.

6. Reflecting on the role and experience of constituents on green jobs: Example from Spain

What are you asked to do?

Participants should break into three groups (based on constituent groups with an employer, worker specialist/representative and government/resource person introducing and facilitating), read through the case study material, discuss the questions below and nominate one member to report back.

1. Is this a useful example of successful social dialogue? What are some of the benefits and challenges identified?
2. What was the role of each constituent?
3. What are the specific concerns of the group with regards to a Just Transition?

Material available: flipchart, coloured pens and coloured post-its

The total time available for the whole exercise is 45 minutes.

Introduction

Spain's Round Tables on Social Dialogue is perhaps the most commonly cited example of effective social dialogue on environmental and employment issues. The round tables were created in 2005 as a mechanism to guarantee the participation of social partners in the design and monitoring of the Emissions Rights Assignment National Plan (NAP) and its effect on competitiveness, employment, and social cohesion.

The tripartite social dialogue roundtables are the result of a compromise reached between the Government, trade unions and employment organisations to establish mechanisms to tackle the issue of compliance with the commitments under the Kyoto Protocol and its impacts on competitiveness, employment and social cohesion. The proposals agreed to at these roundtables are elevated to the Ministries and relevant institutions for their consideration. The main proposals have been the formulation of ad-hoc indicators related to employment and emissions which make it possible to assess the impact of climate change measures on employment in different sectors.

How they function

The creation of the Round Tables was established by Law 01/2005, which regulates the trading of emissions rights. This was achieved by means of Royal Decree 202/2006, which establishes its terms of reference, composition, and functioning. They are supported financially and logistically by the state and regional authorities. In this context, regional conferences are also organized with the aim of cross-fertilising sectoral and territorial issues and taking the development of regional climate plans into account.

Six representatives of each party – Government, employers, and unions – take part in these tripartite round tables. There are eight round tables: one general and seven sectoral (comprising the sectors affected by the NAP including electricity). The sectoral round tables can also include representatives of the Autonomous Communities in the event that the sector has an important representation in these.

Meetings are convened on an annual basis. The following objectives have guided discussions: a) to evaluate compliance with the NAP 2005–2007 and its effects on competitiveness and employment; b) to identify problems in concrete installations or deviations which require correction; and c) to manage the distribution of emissions rights by facility once the rights for each sector have been defined by the NAP and approved by the European Commission. Currently, debate is centred on post-Kyoto international negotiations and the development of the monitoring indicators.

The general round table's role is to compile and articulate the proposals which emerge from the sectoral round tables, and, once these have been considered, to transfer them to the relevant departments of the Government. The sectoral round tables monitor each specific sector. Information is largely provided by the Government, and until now has been based on emissions verification data.

In 2007, it was proposed that specific indicators allowing the monitoring of the progress made in each sector be developed to look at aspects of competitiveness and employment, as well as emissions. This stage of design and monitoring of specific indicators required – and will continue to require – the contribution of detailed, quality information and data from all the actors involved.

Outcomes

While the round tables do not have decision-making power, there is an attitude of attentive listening from the Government, whose aim is to take any agreements and dissent manifested in the round tables into account in its decisions.

To date, the main demand put forth by the round tables to the Administration has been the development of indicators and the constitution of a round table to cover diffuse sectors in order to begin to discuss challenges and goals with organizations from sectors not included in the NAP.

The Administration has responded to these demands by creating the round table and calling on the actors involved to take part in the constitutional meeting of the round table in September 2007. It also elaborated a series of indicators based on the data supplied by different organizations.

The development of a work programme to analyse the degree of implementation of measures to combat climate change and deal with its effects on employment was proposed within the framework of the new round table on diffuse sectors. Also proposed was the creation of working groups by subsector in order to optimize debates.

Other measures promoted by the sectoral round tables include the addition of explanatory parameters such as for importation and exportation, energy efficiency ratios, and employment to facilitate the evaluation of the impact of climate change on competitiveness and employment.

Besides the roundtables, there exist in Spain other spaces of social participation addressing the policies of Climate Change, such as the National Climate Council. Nevertheless, the social dialogue roundtables are unique in their tripartite nature (with Government, trade unions and employer organisations), which gives a new perspective to the discussion on the impacts on competitiveness and employment during the production transformations towards an economy that is more sustainable all around—socially, environmentally and economically.

Assessment of achievements, opportunities and challenges by key actors

An evaluation through in-depth interviews with representatives of the three parties (government, employers' associations and trade unions) by Sustainlabour in 2007 (updated in 2009 and published by the ILO in 2010) found the round tables were a highly valued initiative. Participants considered the round tables an innovative instrument with great potential.

In general, the interviewees were confident that the government was open to hearing out the concerns and demands of the various actors involved. This belief was verified by the fact that commitments and requests emanating from the round tables have progressively been incorporated into government action. An intensification of the round tables' influence on climate change policies and strategies is expected.

The round tables are a positive instrument of information and understanding of the problem. They are considered to be an extremely useful instrument for exchanging information, tracking developments, and pooling of concerns and demands. The round tables are a space for improving the parties' knowledge on the subject and have been a great incentive for some of the agents. Employers and workers receive "formal" information on government measures and the government receives "formal" information on problems that may result in the employer and trade union sectors.

Moreover, as some interviewees emphasize, the round tables allow for a shared and intelligent reading of data, which assists in avoiding over-simplified analyses.

The round tables are an instrument that facilitates consensus. Particular attention was drawn to their contribution to dialogue and to an understanding of the challenges encountered by the different sectors, thereby minimizing the risk of conflict. They have had a calming effect during the initial period of implementation of the NAP both for the trade union and employer parties regarding the potential impacts of implementation for the sectors. This could prove to be one of the most notable effects of the experience, which maintains its validity during the post-Kyoto debates, as the policies and measures formulated and implemented in connection with climate change may be perceived with certain uneasiness by some sectors. An instrument that advances understanding may constitute a key to the success of the post-Kyoto measures.

The round tables have stimulated internal actions in each sector and type of agent. Some employer and trade union organizations have initiated their own internal actions of information such as training or debate as an outcome of their participation in the round tables. This participation has sparked initiatives by different organizations with the goal of guaranteeing their appropriate participation. It is certain that the organizations which engage in such activities will have a clearer understanding of the changes and will be better prepared to participate.

The round tables can be an instrument for more precise monitoring. Following the initial period, new prospects are emerging regarding the activities of the round tables. With the second NAP adopted and in force for the coming years, an important qualitative leap is anticipated in terms of the activities of the round tables, evolving from their predominantly informative character (which they have had to date) to assuming functions as an observatory and advisory body to the government in the post-Kyoto negotiations.

This new dimension of the round tables also implies an intensification of their work, which will have an impact on the frequency and content of discussions. It also requires the creation of new instruments or for improvements to existing instruments for gathering, tracking and assessing data. Indicators will serve to analyze the evolution of the sectors, to anticipate possible disagreements and to design strategies and measures to minimize conflicts. A significant proportion of the workload involved in this new role is being assumed by the government, including the disaggregation of specific data and information, which would not have occurred, had the dialogue round tables not existed. This obvious result will help all of the other agents, including the Government itself, to better follow up on the measures pursued.

The functioning of the round tables represents an additional burden of work for the Government (the Ministry of Labour and Social Affairs, the Ministry of Environment and the Ministry of Industry) which must be anticipated with the allocation of timely funding. The responses received from the Government revealed, on the one hand, a desire to maintain the status quo on account of resources, which are insufficient for taking on the anticipated additional burden and, on the other, a tendency towards the recognition of the need to expand functions. The position is much less supportive of expansion.

The hope is that the aforementioned growth and maturing of the space galvanizes the process as a space for negotiation between parties and between sectors, strengthening it and increasing its influence and importance during the decision-making process. The true scope of the round tables remains to be seen. Key objectives such as anticipating adverse effects or guaranteeing social cohesion remain to be evaluated in time.

It appears that the experience has been very positive for all three parties. The round tables have a potential that has not yet been fully realized, and whose scope will depend largely on the will of the parties and their readiness to maintain mature and productive dialogue in dealing with the enormous challenges they face.

References:

ILO. *The impact of climate change on employment: the management of transitions through social dialogue*. Geneva 2010. http://www.sustainlabour.org/dmdocuments/en337_2010.pdf

7. RooHsing Garment Factory, Cambodia¹

I. Introduction

The RooHsing factory is a privately owned, foreign investor garment manufacturing enterprise, located in Phnom Penh, Cambodia. The main products of the company include, but are not limited to, Denim cotton Jeans and trousers. For production, fabric is imported from Taiwan and Hong Kong, and products are mainly exported to USA, EU, Japan, and Canada. The company has a workforce of over 3700 employees.

The factory was selected as a demonstration company in the textile/ garment sector by the Cambodian Clean

Production Programme (as part of UNIDO's clean production initiative). Within this programme, companies are recommended to implement a range of measures that can improve energy and resource use efficiency. The RooHsing factory implemented a wide range of these mechanisms, totaling an investment of \$630,000 that resulted in savings of \$666,000 per year. Other indirect benefits of these mechanisms include, inter alia, reduced waste management costs, increased exports, improvements in working conditions, and improved environmental performance.

II. Production processes

While the RooHsing factory produces a range of fabrics, its main product is denim, making it the most energy and resource intensive product. Denim's production process at RooHsing comprises the following steps-

Hot washing- this operation is done to remove any residual sizing chemicals, improve the fabric's wettability and its absorption capacity

Soap washing and scouring- soap washing is done to remove superfluous color, and impurities like gums, waxes and pectin. Scouring is done to improve the wettability of the fabric, improve its brightness and softness.

Softening/ finishing- softening and finishing operations are done to improve luster, evenness, dust-proofing, and anti-crease properties.

Spinning and drying- during this step, the garment is subjected to mechanical dewatering through centrifuges and steam. It is then ironed, accessorized, and dispatched.

It is evident that producing denim is highly water and energy intensive, with a high potential to generate large amounts of waste. The clean production team conducted a site study of the factory to assess areas for improving resource and energy use efficiency. It was observed that consumption of energy sources such as fuel oil and electricity was very high relative to benchmarks in other countries. The factory processes were also marked by high water and chemical use, resulting in high liquid and gaseous waste generation. These can be attributed to factors such as poor combustion, low efficiency of steam generation, poor steam distribution, and high cloth to liquor ratio.

¹Adapted from: Case Studies on the Cambodian Cleaner Production Programme. Ministry of Industry, Mines and Energy, Department of Industrial Techniques, Cambodian Cleaner Production Programme. Phnom Penh, Cambodia.

III. Actions and impacts

- ❖ Improving efficiency in water use- The factory started recycling treated waste water for scrubbing flue gases (fly ash). This solution both decreased water usage and waste-water generation. Another mechanism to improve collection of condensate as boiler feed water also reduced water use.
- ❖ Reducing waste and associated treatment costs- The factory invested in optimizing cloth to liquor ratio, reducing treatment costs for waste water and sludge handling at the treatment facility.
- ❖ Reducing energy use- The Company also invested in insulating the steam pipe distribution network, reducing fuel consumption for steam generation, and reducing both gaseous and greenhouse gas emissions. Installation of an electricity meter led to better monitoring and control in usage, resulting in more efficient use of energy in the production process.

IV. Summary

Table 1-Summary table for RooHsing Garment factory

Action taken	Impact	Investment	Return	Payback period
Recycling of treated waste water for flue gas scrubber	Reduced water usage	Include in investment below	Not quantified separately	Less than 1 year
Substitution of three fuel oil boilers with one wood fired boiler	Reduced emissions	US \$600427	US \$568696	Less than one year
Optimization of cloth to liquor ratio	Reduced waste water, emission, and pollution load	Nil	US \$15864	Less than one year
Insulation of steam pipes	Reduced fuel oil consumption	US \$19526	Included in action 2	Less than one year
Combining production processes (e.g. hot bleaching)	Reduced pollution volume	Nil	Not quantified separately	Less than one year
Installation of electricity meter	Reduced Electricity consumption	Negligible	US \$68341	Less than one year
Improved collection of condensate	Reduced water usage	US \$15132	Not quantified separately	Less than one year