

Projet ANR- 11-AGRO-0007

SPOP

Programme Agrobiosphere 2011

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A IDENTIFICATION

Acronyme	SPOP
Title	Sustainable Palm Oil Production
Coordinators	Dr. Cécile Bessou Dr. Alain Rival
Date of project's start	01/03/2012
Date of project's end (conventions)	30/08/2012
Web page	http://spop-travail.cirad.fr/ (still under construction)

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B PROJET START

B.1 LAUNCHED ACTIVITIES AND INVESTED MEANS

SPOP meetings

Date	Place	Partners present	Agenda of the meeting
12.03.2012	Montpellier	CIRAD + INRA + IRD (video conference with P. Levang in Cameroon)	Kick-of meeting: see Annex C1

Date	Place	Partners present	Agenda of the meeting
07.06.2012	Montpellier	CIRAD + INRA (visio-conference with J. Wohlfahrt in Mirecourt)	Technical committee 2: see Annex C2

A summary of activities launched and invested means is presented hereafter for each work package. Details on the chronological sequence of events and decisions can be found in the minutes of the two Technical Committee meetings presented in annexes C1 and C2. Activity reports were provided by each Task coordinator and edited by both SPOP coordinators, C. Bessou and A. Rival.

Brief overview of tasks, tasks' coordinators, and deliverables

SPOP – 03.2012 to 09.2015

	Deliverables	Coordinators + Partners
WPO	Web site Report at t+6, +18, +30, Final report Mid-term review + Final presentation at ANR	CIRAD (UPR34)
WP1	Characterization of the various oil palm cropping systems: agricultural practices and 3D impacts, potential adaptation to global constraints	
	Task 1.1: Building the superimposable assessment grids <ul style="list-style-type: none"> ♦ A review of relevant available agro-ecological and socio-economic indicators ♦ A methodology to identify the sensitivity of oil palm plantations to global changes, the room for improvement and adaptation pathways ♦ 3D-assessment grids + results of field testing of the assessment grids (involvement of stakeholders + ways of improvement of the grids) 	CIRAD + IRD/CIFOR, INRA, PT-SMART
	Task 1.2: Analyzing perception of global changes and of new production standards for palm oil sustainability <ul style="list-style-type: none"> ♦ An analysis of oil palm cropping systems and global changes perceptions: recommendations for adaptation strategies. 	CIRAD + CIFOR/IRD, local partners
	Task 1.3: Organization of reflexives and workshops to involve the stakeholders in the definition and use of the assessment grids <ul style="list-style-type: none"> ♦ A review of controversies and players related to palm oil expansion ♦ A methodology of "hybrids forums" adapted to palm oil controversies ♦ 3 reflexive workshops 	CIRAD + CIFOR/IRD, local partners
	Task 1.4: Data collection to fill up the assessment grids and characterize the various oil palm cropping systems <ul style="list-style-type: none"> ♦ A typology of the diverse oil palm cropping systems in Sumatera according to their 3D impacts ♦ Key strategies to adapt the cropping systems according to the diverse system specificity ♦ Farm gate life cycle assessments of the diverse oil palm cropping systems ♦ Recommendations to the producers 	CIRAD + IRD/CIFOR, PT-SMART
	Task 1.5: Comparative analysis of oil palm cropping systems in Indonesia and Cameroon <ul style="list-style-type: none"> ♦ A description of oil palm cropping systems in each country. ♦ A comparison of the oil palm development processes in the two countries, which underlines the positive and negative outcomes linked to the specificity of the local and national contexts. ♦ Policy recommendations 	CIFOR/IRD + CIRAD
WP2	Land use planning and management options as scenarios for adaptation strategies	
	Task 2.1: Global scenarios definition <ul style="list-style-type: none"> ♦ Scenarios of evolution of the oil palm sector depending on a number of variables of influence and defined by the stakeholders. 	CIFOR/IRD + CIRAD
	Task 2.2: Modelling oil palm dynamics in Sumatera <ul style="list-style-type: none"> ♦ Oil palm suitability maps of the study area ♦ Oil palm dynamics model of the study area 	INRA + CIFOR/IRD, CIRAD
	Task 2.3: Land use scenarios <ul style="list-style-type: none"> ♦ Prospective land use maps of the study area ♦ General levers for managing oil palm dynamics 	INRA + CIFOR/IRD, CIRAD

WP0: SPOP coordination

The coordinators organised two Technical Committee meetings in Montpellier and maintained a continuous flow of information both between partners and with ANR. The final budget notification was signed on May 21st, 2012. The final agreement between CIRAD and the sub-contractor CIFOR is being signed by both parts.

A Concept Note has been prepared and will soon be sent to putative invited members of the SPOP Steering Committee (answers are expected by the end of 2012 for a first consultation 1st quarter 2013). This committee should be consulted once a year in order to get feedback on strategic orientations governing the project (Annex C1).

Besides, Coordinators and SPOP members actively advertised the project in CIRAD Annual Report 2011 (p. 59) and CIRAD Quaterly Newsletter *Graines d'info* (N°60-April 2012). An agreement has been obtained with the CIFOR Communication Team to jointly advertise SPOP Project (within the frame of Programme CRP6-Component 5): CIFOR will advertise SPOP on the CIFOR webpage and will also design info-briefs on SPOP.

We carried out some benchmarking on projects which deal with the assessment of palm oil sustainability in SouthEast Asia. The assessment of sustainability in oil palm plantations and its certification must be robust and accepted by all stakeholders, thus relying on solid scientific basis. Several international collaborative research programs have recently emerged in the aim of: i) better understanding and describing forest ecosystems and plantations (*SAFE Project: SimeDarby Foundation/ Imperial College London/Royal Society*); ii) generating robust and shared agri-environmental indicators (*PalmiNet Network, Cirad and partners*); iii) sustainably managing soil and water resources for oil palm production systems (*James Cook University Australia, ACIAR, Oil Palm Research Association, PNG*); iv) tackling conservation issues with a landscape perspective (*ZSL London, LIPI Indonesia*); and diverting planned oil palm plantations in Indonesia away from natural forests and toward degraded or low carbon areas with high potential for sustainable expansion (*POTICO Project, WRI*). It is important within the scope of SPOP to potentially develop synergies with such projects. Contacts were taken with the projects' coordinators and further information is given on SPOP webpage with their agreement.

Indeed, the designing of SPOP webpage has been implemented with funds and technical assistance provided by CIRAD. The coordinators followed a 3-day training session on the use of Ez-publish and Alfresco-share, the software package used to develop and update the website. Useful assistance was provided by CIRAD staff, namely: T. Erwin, C. Gourment, and B. Girardot. The website should be opened to the public in September 2012. Moreover, M. Duportal a designer from CIRAD, is currently creating an original logo for SPOP which will be published on the website and widely use for communication and advertising on the Project.

WP1: Characterization of the various oil palm cropping systems: agricultural practices and 3D impacts, potential adaptation to global constraints

Task 1.1: Building the superimposable assessment grid

Task 1.1: Description

Objectives of tasks 1.1, 1.3 and 1.4, are to assess the 3D impacts of various palm oil production

systems and to define adaptation strategies to improve these systems toward sustainability. The approach is a multi-disciplinary one that put emphasis on the multiplicity and the interactions between agronomic, environmental and socio-economic determinants of the systems' performances and gaps. The first activities within task 1.1 consist in providing raw material to build-up the assessment grid. The assessment grid will be finalised with the contributions of local actors (task 1.3) and then will be field-proofed in Indonesia (task 1.4).

Given the expertise of SPOP partners on palm oil systems and on agricultural system evaluation, the assessment grid is being built-up by capitalising on recent experience while adapting and improving existing methodologies and indicators.

Firstly, recent experience was acquired on combining agronomical diagnosis and LCA approach (Vélu, 2011 & Duryat, 2011) through internships coordinated by SPOP members (S. Rafflegeau, M-P. Carron, C. Bessou). Agri-environmental impact indicators on nitrogen and pesticide treatments for oil palm are being finalised and will be field-tested under SPOP during next year. A new research project is being initiated which aims at analysing the global fertility of soils under oil palm stands. Research specifically focuses on the impact of changes in soil organic matter and soil biota on the global fertility. The project strategy notably relies on the study of soil biota (macrofauna, nematodes and microorganisms) in order to develop methods and tools for the assessment of the combined effects of agricultural practices and soil biota on soil fertility and on the sustainability of the soil-crop capital. This approach and the knowledge and tool developed will be used in the field within SPOP as part of the assessment grid. This project is led by M-P. Carron, a SPOP member.

Another approach that may be partly integrated in the assessment grid is also being implemented by PT-SMART one of the SPOP field partners and coordinated by J-P. Caliman, a SPOP member. This approach focuses on the assessment of ecological services that contribute to oil palm sustainability. Ecological services are often mentioned by environmentalists for its key contribution to agriculture sustainable productivity, but being jeopardised by environment degradation, such as biodiversity losses, habitats degradation, and climate change. Farmers, including oil palm planters are often not aware of the role and value of these services supplied to them, often free of charge, with generally high financial impact, but requiring specific care in terms of field practices. A paper was presented at the 2012 International Conference on Oil Palm and the Environment, aiming to demonstrate the importance and the range of services provided by the environment to the oil palm industry. Several examples have been described and quantified, in both agronomic aspects and financial values, such as pollination, biological nitrogen fixation, nutrient recycling, pest and diseases control... In a second step, the presentation analyzed on the one hand the prospects for an increased role of ecological services for the sustainable production of palm oil, while on the other hand the risk of losing these benefits in relation to poor agricultural practices, or to climate change.

Finally, the assessment framework developed within WAW (World Agriculture Watch) is being adapted to fit with palm oil systems by P-M. Bosc, a SPOP member, with input of an internship (see below). This global framework should help define the overall structure of the superimposable 3D assessment grids and the joint with more qualitative socio-economic analysis, while making sure that no trade-offs occur between impacts.

Due to the start of SPOP in March 2012 only, we had trouble starting directly with a 6-month internship for task 1.1 and 1.3. Thus we decided to embark on a 2-month internship (A. Baudoin) aiming to carry out a very important preliminary work for further activities within tasks 1.1-1.4.

Task 1.1: Alice Baudoin's internship

Alice Baudoin has been an intern for the SPOP project since mid-June 2012, co-tutored by P.-M. Bosc and C. Bessou. The aim of the internship was to carry out an exhaustive literature review on palm oil systems in Indonesia (see details in C2). Indeed, a lot of information has been collected for several years at CIRAD and CIFOR which needed to be compiled. Especially, reports from previous interns contain a lot of not-published data and information which needed to be compiled and reviewed. The main objective of this report is to help identifying more precisely in which districts in Sumatra the SPOP workshops and field work should be carried out. For this selection, we must be assured that already acquired data are useful for SPOP implementation and that missing data are available to reach SPOP targets. Alice's report will be published in September. A first exploration to adapt the WAW framework took place for a joint presentation during a seminar organized in Cirad (July 9th) as an attempt to integrate the way oil palm development has been implemented through various types of production structures.

Task 1.1: Preliminary results (publications)

Bessou C., Vélú A., Caliman J.P. (2012) LCA of Palm Oil in Sumatra, Comparison of Cropping Systems. ICOPE Conference, 22-24 February 2012, Nusa Dua, Bali, Indonesia
Duryat (2011) Dynamics of plantation and yield analysis in oil palm smallholdings, Riau Province Sumatra, Indonesia. Mémoire de fin d'études du Master Agriculture, Agronomie et Agro-Alimentaire - Supagro, Montpellier. 58p.
George H., Bélières J.-F., Bosc P.-M., Baudoin A., Even M.-A. (2012) Reconsidering structures in production dynamics: methodological insights from World Agriculture Watch and preliminary elements on Indonesia, WAW Executive Secretariat, Rome – Montpellier; SupAgro Montpellier. Cirad – Journée Palmier à huile, 9 juillet 2012
Snaddon J.L. (2012) The Value of Biodiversity to Ecological Services within the Oil-Palm Landscape. ICOPE Conference, 22-24 February 2012, Nusa Dua, Bali, Indonesia
Vélú A. (2011) Analyse du Cycle de Vie (ACV) de l'huile de palme indonésienne. Mémoire d'ingénieur de VetAgroSup, Clermont-Ferrand. 75p.
WAW (2012) World Agriculture Watch, Monitoring Structural changes in Agriculture - Informing Policy Dialogue. Methodological Framework. Summary Version 2.6. FAO/CIRAD. 48p.

Task 1.2: Analyzing perception of global changes and of new production standards for palm oil sustainability

Task 1.2: Description

E. Cheyns is the coordinator of this task. She will undertake in-depth interviews in Europe and in Indonesia involving a wide panel of stakeholders (local and international NGOs, companies, smallholders associations, certification bodies, etc.) in order to analyse their perception of global and local changes and of oil palm sustainability.

She will undertake an analysis of the perception of global changes : i) at the international scale with stakeholders involved in RSPO (representatives from local and global NGOs, plantation companies, transformation industry, banks,...) ii) at the production area scale, involving local communities, smallholders and local authorities.

Emmanuelle will also supervise a Sociology student in Indonesia. The intern could be specialized in visual sociology, i.e. using the image as a research object being a reflexion of various perceptions of a given problem. Also the intern should attend the workshops organized by L. Feintrenie and her intern to favour synergies between interns involved in several tasks of SPOP.

Task 1.3: Organisation of reflexive workshops to involve stakeholders in the definition and use of

Tas 1.3: Description

Production and dissemination of knowledge is a central feature of normalization processes. In the case of multi-stakeholder initiatives (MSI) like RSPO, knowledge delivery is alleged to be performed not only by scientist or experts, but by all stakeholders, with different experiences, world visions and backgrounds. This research aims at contributing in how these different types of knowledge (coming from scientist and other stake-holders) can be integrated to develop sustainable palm oil production indicators and criteria. The research program will start on September 2012, under the supervision of M. Djama (SPOP member) at Universiti Putra Malaysia. First step of the research starts with a review of controversies and players related to palm oil expansion; to be delivered on February 2013. Review of different type of multi-stakeholders arena of negotiation will be performed in order to produce a methodology adapted to palm oil controversies, as well as to assess the role and contribution of scientific knowledge in RSPO: first draft to be delivered on June 2013. Three annual reflexives workshops with stakeholders will be organized to discuss and integrate researches activities at different steps as presented in the provisional timetable below.

Task 1.4: Data collection to fill up the 3D grid assessment and characterize the various palm oil production systems

To be started once Tasks 1.1 & 1.3 are completed

Tasks 1.1 - 1.3: Provisional timetable

September 2012 – December 2012:

- Production of the 3D grid assessment to be discussed during the first reflexive workshop

January 2013:

- Preparation of field work and internship planning

March 2013:

- First reflexive workshop

April – September 2013:

- Internships for data collection
- 3D assessment and characterisation of the diverse palm oil systems

March 2014:

- Second reflexive workshop

February 2015:

- Third reflexive workshop

Task 1.5: Comparative analysis of oil palm production systems in Indonesia and Cameroon

Task 1.5: Description

A comparative analysis of oil palm production systems in these two countries will underline the positive and negative outcomes linked to the specificity of local and national context, and will generate policy recommendations to promote sustainable production systems.

This task is coordinated by Patrice Levang (CIFOR/IRD) and Laurène Feintrenie (CIRAD). The research team also includes a Cameroonian PhD student, Raymond Nkongho, who is contracted by CIFOR. Raymond's Ph.D. research is funded half by SPOP with a non-permanent CIFOR staff status. His activities related to task 1.5 should run from January 2013 to December 2014. In complement, Oriane Plédran, a Master 1-internship on the development of palm oil in Cameroon was supervised by S. Rafflegeau with some participation from P. Levang and A. Rival. This internship was not funded by ANR.

Task 1.5: Raymond Nkongho's PhD

"Conditions to sustainably develop the smallholder oil palm sector in Cameroon"

Abstract:

The research will favor a holistic approach of the development of the oil palm sector in Cameroon with a particular emphasis on smallholders, their strengths and weaknesses, their links with agro-industries, their economic, social and environmental impacts. The ultimate goal of the research undertaken is to contribute to the promotion of a smallholder oil palm development that is environmentally friendly, socially acceptable and economically beneficial.

The importance of oil palm at the household level and the national economy in Cameroon cannot be over emphasized. Despite its positive merits oil palm is accused of being a driver of deforestation which ultimately results in major biodiversity losses and global warming since huge expenses of forests are usually cleared for the cultivation of oil palm. The experiences gained in Southeast Asia, notably Malaysia and Indonesia, Latin America, notably Colombia and Brazil will be very useful for the research and this will go a long way to enforce some governance in the oil palm sector in Cameroon.

With the recent incoming of some large oil palm companies especially from Southeast Asia to invest in Africa and Cameroon in particular, the research will be quite timely since it hopes to address some of the questions being posed in most international and national conferences today concerning oil palm/forest/climate change.

Raymond is presently working on a report on oil palm development in Cameroon due in September 2012. The report will provide information on:

- History of oil palm in Cameroon, from natural palm groves to colonial plantations then to the present situation, including the reasons of failure of the joint-ventures and industry-community partnerships,
- Typology of oil palm producers (various types of smallholders, medium holders, public and private companies)
- Description of each type of producing system: surface of oil palm plantation (total for the type and individual), type of labor force, production, economic results (return to labor and to land), processing (if any) and marketing
- Description of the market chains ('artisanal'/informal, industrial, and family consumption): role of women, middle men, added value at each step, final consumer

Raymond Nkongho will go to Indonesia between September and December 2012 in order

to study the KKPA and other smallholder oil palm schemes developed in this country.

Task 1.5: Field trip report

In June 2012, Laurène Feintrenie and Patrice Levang visited the Littoral and South-West provinces of Cameroon in order to collect data and supervise Raymond's research. The main objective of this field trip was to evaluate progress and help Raymond overcoming difficulties he might encounter in his research. Raymond, Laurène and Patrice undertook joint fieldwork during one week and met a number of artisanal palm oil millers, small and medium owners of oil palm plantations, several managers of CDC plantations, and research staff from IRAD at the La Dibamba National Research Center.

They also attended a workshop organized by SGSOC in Buea, (Cameroon) on June 19-20th, on 'Collaboration in conservation and development'. Patrice presented an analysis of lessons learnt from Indonesian oil palm development experience, and how this can help in designing an oil palm development plan in Cameroon. The objective of the workshop was, for SGSOC, to build partnerships between local and international NGOs, both social and environmental and to implement social and conservation actions in the area where the company has some plantation plans.

For us, this workshop was an opportunity to get first-hand information on SGSOC project of oil palm plantation. This project is very controversial and it is the first oil palm large-scale plantation (more than 60,000 ha) funded by a foreign investor in Cameroon which doesn't build on former colonial plantations.

Task 1.5: Oriane Plédran's internship

With the aim to contribute to SPOP project, O. Plédran, a Master-1 student at IEP (Institut d'Etudes Politiques) from the University of Lyon II, carried out a literature review on palm oil development in Cameroon. The Master thesis, entitled "Le développement des plantations de palmiers à huile au Cameroun : enjeux pour un développement durable" was recently issued and a public defense will take place in Lyon on September 6. The analysis of the sustainability determinants for the palm oil supply chain in Cameroon started with a state of the art of the palm oil supply chain, followed by its challenges and perspectives, and then a structured analysis of the agronomical, environmental and socio-political aspects (throughout the certification standards) of palm oil sustainability.

Task 1.5: First published results

Feintrenie L. 2012. Oil palm in Cameroon: risks and opportunities. *Nature et Faune*, in press.
Hoyle D. and Levang P. 2012. *Oil palm development in Cameroon*. WWF Working Paper
<http://www.cameroun.ird.fr/toute-l-actualite/l-actualite/le-developpement-du-palmier-a-huile-au-cameroun>.

A first presentation of lessons learnt from oil palm development in Indonesia useful to oil palm development plans in Cameroon has been shared at various conferences and workshops:

Feintrenie L, Levang P, Ngom E. 2012. *Transfer of the Asian model of oil palm development : from Indonesia to Cameroon*. World Bank conference on land and poverty, Washington DC, USA, 23-26 April.

Feintrenie L, Levang P, Ngom E. 2012. *Transfer of the Asian model of oil palm development : from Indonesia to Cameroon*. International oil palm conference, Fedepalma, Cartagena,

Columbia, 25-28 September.

Levang P, Feintrenie L. 2012. *Oil palm development in Cameroon, lessons learnt from Indonesia*. SGSOC Collaboration in conservation and development workshop. Buea, Cameroon, 19-20 June.

Plédran O. 2012. *Le développement des plantations de palmiers à huile au Cameroun: enjeux pour un développement durable*. Diplôme IEP – 4^e année, Affaires internationales, Séminaire d'économie du développement durable 2011-2012. 153p.

WP2: Land use planning and management options as scenarios for adaptation strategies

Task 2.1: Global scenarios definition

Task 2.1: Description

This task aims at defining scenarios of evolution of the oil palm sector - including the production systems, the trade chain and the governance of this economical sector by public authorities - with the stakeholders of the sector, at various scales. To achieve this goal we will undertake a Participatory Prospective Analysis (PPA), as developed by Bourgeois and Jésus (2004¹). This method is based on a succession of workshops with stakeholders aimed at defining a system - here the oil palm sector, the variables which may influence this system, their interactions, and finally scenarios of evolution of the system depending on the evolution of the variables.

This research will be conducted in one district in Indonesia and one in Cameroon. PPA workshops will be organized in 3 villages per district, as well as at the district scale.

This task is coordinated by Laurène Feintrenie (CIRAD) and Patrice Levang (CIFOR/IRD). The research team also includes a Cameroonian PhD student, Raymond Nkongho, and will involve a Master student (as an intern). Margot Moulin, a PhD Student working on modeling oil palm dynamics in the Indonesian study site (task 2.2 and 2.3), will also participate in the Participatory Prospective Analysis workshops.

The Task 2.1 should run from January 2013 to May 2014.

Task 2.1: PPA Workshops

Workshops in villages :

- Day 1:
 - Introduction of participants, objectives and methods
 - Definition of the studied system boundaries
 - Identification variables influencing the system
- Day 2:
 - Selection of key variables
 - Identification of relations between variables
- Day 3:
 - Synthesis of relations between variables

¹ Bourgeois, R., F., Jésus. 2004. Participatory prospective analysis, exploring and anticipating challenges with stakeholders. Bogor, Indonésie: UNESCAP-CASPA. 90 p.

- Definition of probable scenarios
- Day 4:
 - Selection of contrasted scenarios
 - Analysis of the consequences of each scenario
 - Selection of a preferential scenario
- Day 5:
 - Identification of action strategies to reach the selected preferential scenario
 - Recommendations

Workshop at district level :

- Day 1:
 - Introduction of participants, objectives and methods
 - Presentation of palm oil sector within the district
 - Presentation of the 3 studied villages
- Day 2:
 - Presentation of the scenarios defined during the workshops in villages
 - Analysis of the implications of these scenarios at the district level
 - Discussion about the scenarios that should be promoted for the district
- Day 3:
 - Identification of action strategies to reach the selected preferential scenario
 - Presentation of proposed strategies during the workshops in villages
 - Proposition of strategies for the district
- Day 4:
 - Presentation of recommendations established during the workshops in villages
 - Discussion and recommendations pour le district
- Day 5:
 - Restitution by the group to local authorities
 - Invitation of villagers, enterprises, NGOs, district authorities and administration bodies

In partnership with an intern supervised by Emmanuelle Cheyns (task 1.2) on perception of changes by stakeholders. A PhD student from INRA, Margot Moulin, will participate in this task 2.1, before taking charge of tasks 2.2 and 2.3 (modeling).

Task 1.5: Provisional timetable

Month	Task	People involved	Activity	Deliverable
May 2011- Aug 2012	1.5	Raymond (with Patrice and Laurène)	Research on oil palm in Cameroon	Report, 3 papers
Sept-Dec 2012	1.5	Raymond	Research on oil palm in Indonesia	Report
Sept	1.5	Raymond	Indonesian language classes	
1 st week of Oct	1.5	Raymond	CIFOR annual meeting	Presentation on oil palm in Cameroon
Oct-Dec 2012	1.5	Raymond	Field work in Sumatra (to PT. Musim Mas and later to PT. Smart for the study of KKPA and other smallholder oil palm schemes developed in Indonesia)	Trip report

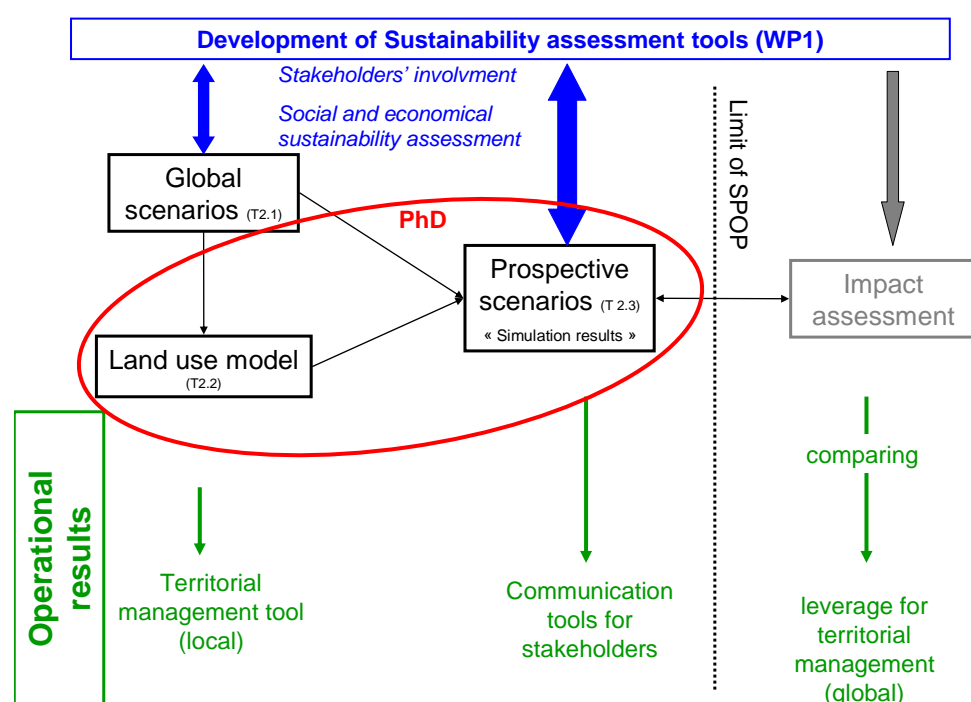
Jan -May 2013	1.5	Raymond (with Patrice and Laurène)	Comparison of oil palm in Cameroon and in Indonesia	Report, paper
June-Aug 2013	1.5	Raymond	Complementary data collection in Indonesia	Report
May – Oct 2013	2.1	Laurène, Raymond, Patrice, 1 intern, Margot	PPA workshops in Indonesia	Report, narratives of scenario of oil palm development at village and district scales
May	2.1	intern	language class and literature review	
June – July	2.1	Intern, Laurène	Literature review and field survey (perception survey on oil palm development among the various categories of stakeholder in the district) One field trip for Laurène to supervise the intern.	
August	2.1	intern	Preparation of the workshops (selection and invitation of the 10 participants in each workshop, in the district workshop we should have one participant of each of the village workshops, plus representatives of all the other stakeholders categories).	
September	2.1	Laurène, Raymond, Patrice, 1 intern, Margot	PPA workshops : 1 month field trips for Laurène, Patrice, Margot and Raymond.	
October	2.1	intern	Writing a report	Master thesis
October	2.1	Laurène, Raymond, Patrice	Analysis and writing	Narratives of scenario of oil palm development at village and district scales.
Nov 2013- Feb 2014	2.1	Raymond, Laurène, Patrice	PPA workshops in Cameroon	Report, narratives of scenario of oil palm development at village and district scales.
November	2.1	Raymond	Preparation of the workshops (selection and invitation of the 10 participants in each workshop, in the district workshop we should have one participant of each of the village workshops, plus representatives of all the other stakeholders categories).	
Dec 2013- Jan 2014	2.1	Raymond, Laurène, Patrice	PPA workshops	
Feb 2014	2.1	Raymond, Laurène, Patrice	Analysis and writing	Narratives of scenario of oil palm development at village and district scales.
May 2014	2.1	Laurène, Raymond,	Writing	Paper based on narratives of oil palm

		Patrice		development scenarios in Cameroon and Indonesia. Policy recommendations.
March – Aug 2014	1.5	Raymond	Compilation of research data, paper writing, thesis writing	PhD Thesis, 4 papers
Dec 2014	1.5	Raymond	Public defense in University Paul Valéry of Montpellier	PhD Defense

Tasks 2.2 and 2.3: Modelling of oil palm dynamics in Sumatra and land use scenarios

Tasks 2.2. and 2.3: Description

The aim of the WP2 is to assess future developments of oil palm plantations. This will be done by (i) establishing global evolution scenarios (task 2.1.) and (ii) developing a land use change model based on the actors' systems and spatial analysis to assess territorial re-organizations regarding oil palm potential futures (tasks 2.2. and 2.3.). These tasks are coordinated by J. Wohlfahrt and M. Benoît (INRA) and Jean-Marc Roda (CIRAD). Tasks 2.2. and 2.3. will be achieved during a PhD work carried out by Margot Moulin.



Task 2.2 and 2.3: Achievements since March 2012 :

Selection of a PhD student:

We selected Margot Moulin as a PhD student for the SPoP project. She is currently a Master student in agronomic engineering sciences at Ecole Nationale Supérieure d'Agronomie et des Industries Alimentaires (ENSAIA, Nancy, France). Margot has been following the Agronomist program, speciality Agriculture and Territorial Development (expected diploma in September 2012). She has been driving her professional experiences towards research projects (gap-year in Australia, 2010-2011). Currently undertaking her end-of-studies internship, she's studying farmers' decisions rules changes at the farmland scale, involving interviews, qualitative data analysis, SIG and conceptual modeling (French National Institute of Agronomical research,

Science for Action and Development- Paysage INRA-SAD-Paysage in Rennes, March-August 2012). With her background in agronomy, her experience in modeling and international mobility, Margot Moulin seemed to have the expected skills to achieve the PhD proposed by our SPOP project.

Preliminary work:

Based on CIRAD and CIFOR expertise, we were able to contact Dr Fahmuddin Agus, an Indonesian Researcher based at the Indonesian Soil Research Institute, whose research is focused on deforestation practices. Dr F. Agus agreed to be a member of the PhD steering committee. To our mind, having an Indonesian researcher in this committee is really important (i) to keep the scientific work close to Indonesian issues, (ii) to benefit from “local” expertise and (iii) to initiate an international collaboration.

As an output of the SPOP kick-off meeting and first steering committee meeting, we selected the study area for WP2. The study will be implemented in the Riau and Jambi provinces for the spatial data mining. The stakeholders’ rule elicitation will have to be done at a smaller scale. As task 2.1 is working at the village scale, we will then first base the surveys on the same spatial area, in order to benefit from the local dynamic induced by task 2.1.

Since July 2012 we are identifying potential data available for our study sites. We first focus on available satellite data for remote sensing.

Tasks 2.2 and 2.3: Provisional timetable

September 2012:

- first review of available spatial data

October 2012:

- Beginning of the PhD

October 2012 – April 2013: (in France)

- Literature review on production system dynamics and oil palm production dynamics
- Spatialized data collection and preliminary spatial regularities identification
- First steering committee of the PhD: validation of the research questions accuracy

April 2013 to October 2013: (in Indonesia)

- Field work: survey, data collection
- First formalization of the palm oil production systems in Riau and Jambi
- *Deliverable 1: oil palm suitability maps of the study area*

October 2013 to April 2014: (in France)

- Development of the oil palm dynamic system production model (coupling spatial regularities and agent based modelling)
- Second steering committee
- First scientific article

April 2014-October 2014: (in Indonesia)

- Field work: survey, data collection
- Model validation / feedbacks between validation and development to improve the model
- Scenarios simulation and validation
- Third steering committee
- *Deliverable 2 : Oil palm dynamics model of the study area*

October 2014-September 2015:

- finalising the model development and the scenarios
- Second scientific article

- Writing of the PhD
- *Deliverable 3: Prospective land use maps of the study area*
- *Deliverable 4: General levers for managing oil palm dynamics*

B.2 ENCOUNTERED OR EXPECTED DIFFICULTIES

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B.3 COMMENTS

Comments of coordinators

The project is running very smoothly so far, with very fruitful interaction between Partners and the successful implementation of several training projects at Post graduate and PhD levels.

Comments of partners

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Questions to ANR

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C ANNEXES

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SPOP 2012-2015	Kick-off meeting 12-13 March 2012 Minutes	Cécile Bessou Alain Rival	
Participants : Cécile Bessou CB, Alain Billand AB, Pierre-Marie Bosc PMB, Jean-Pierre Caliman JPC (tel), Marc-Philippe Carron MPC, Emmanuelle Cheyns EC, Béatrice Dhellemmes BD, Laurène Feintrenie LF, Eric Gohet EG, Claude Jannot CJ, Patrice Levang PL (visio), Hubert Omont HO, Sylvain Rafflegeau SR, Alain Rival AR, Hervé Saint-Macary HSM, Sloan Saletes SS, Julie Wohlfahrt JW.			
Agenda	12. March (am + pm) 13. March (am)	Intro EG (10mn) Discussion on the WP & Tasks, next steps (3hr)	Agrobiosphere 2011 SPOP Administrative aspects AR (25mn) CB(25mn) SS + BD (30mn) Presentations of WP & Tasks PMB, EC, LF, JW (pm: 4hr)
Context			<p>SPOP, Sustainable Palm Oil Production, is one of the 7 granted projects out of 23 submitted for the call Agrobiosphere 2011. It is in line with the objectives of Agrobiosphere 2011, i.e. understanding the influences of global changes on production systems with emphasis on primary production (cropping systems) and how these systems can adapt to these global changes and subsequent constraints towards a sustainable production.</p> <p>SPOP is important because of the great importance to develop sustainable palm oil production given the increasing global oil needs and pressure on the resources. Sustainability of palm oil production should be based on both RSPO P&Cs and scientific knowledge to allow for a better quantification of impacts and a greater efficiency of P&Cs. The trans-disciplinary researches within SPOP also are paramount in both involving local actors in improving the analysis grid and understanding the perception of global changes by local populations so as to define control levers and strategies towards a sustainable production.</p> <p>SPOP duration: 1st March 2012 – 31 August 2015; Reports to ANR +6, +18, +30 months</p>
Discussion points			<p>Activities, brief overview and first steps:</p> <p>Task articulation: T1.1, T1.2 and T1.3 are highly connected in time; T1.4 comes after. T1.5 already started but may be reinforced (more detailed) once the other WP1 tasks are fulfilled. WP1 and WP2 are independent and disconnected in time. T2.1 and T2.2 may be fulfilled in parallel, whereas T2.3 depends on the fulfillment of T2.1 and T2.2.</p> <ul style="list-style-type: none"> - WP1: T1.1; based on the current status of socio-economic and environmental indicators proposed within the frame of the WAW project and the experience of UR34 in assessing the performances of oil palm cropping systems in both Indonesia and Cameroon, SPOP members (CB, PMB, MPC, CJ, SR) will define the objectives and content of an internship aiming to produce the core set of indicators for the preliminary assessment grids (Task WP1.1): see Intern I.2 below. - WP1: T1.2 + T1.3; task on assessing the perception of global changes by local actors (T1.2) and the reflexives (T1.3) to refine indicators (i.e. add site-specific indicators to the core set) with local actors both proceed from the necessity to involve local actors as much as possible, and should therefore allow for synergies between tasks. Indicators are the results of a social and political construction within a given context; they are not limited to technical aspects. Hence their co-construction with local actors is crucial in order not to miss the target. Investigating the perception by local actors of global changes and controversies on the diverse oil palm cropping systems can also help better identify the best adaptation strategies first by understanding how the multiplicities of perceptions interfere with the discontinuity between local and global levers, then by linking these perceptions with action types and ranges. For planned first steps in T1.2 and T1.3 see I.1 et I.3. - WP1: T1.5; Raymond Nkongho (RN) started his Ph.D. thesis in 2011. The topic of his thesis work is notably to compare oil palm systems in Cameroon and Indonesia in order to identify from Indonesian history the best tracks for sustainable palm oil production in Cameroon. In 2011, RN focused on palm oil in Cameroon. In 2012-2013, he will more focus on the comparison between the two countries. - WP2: T2.1; the global scenarios will be defined with local partners in both Cameroon and Indonesia following the approach of Participative Prospective Analysis. This approach consists of 4 workshops (3 at village level, 1 at district level) over 5 days each. During each workshop, actors are conveyed to discuss the frontier of the studied system (oil palm), the key variables for the system development, and the potential development tracks and preferential ones. T2.1 in Cameroon will be carried out by LF together with RN and PL in 2013-S2. T2.1 in Indonesia will be carried out by LF and an intern: see I.6, with the support of RN and PL, and the participation of the INRA PhD student. - WP2: T2.2 + T2.3: these tasks will be carried out by the INRA Ph.D. student and the supervisors (JW and JMR). The developed model to simulate land use scenarios will combine a model based on spatial regularities (data mining and analyses of dynamics and trends) and a “multi-agent” model based on a more site-specific examination of parameters which should allow validating or not the assumptions on the key variables behind the assumed spatial regularities. The scenario simulations notably involve translating into calibrated parameters qualitative variables arising from the scenario build-up with actors. It is therefore essential that linkages with T2.1 be made upstream. <p>Choice of studied fields:</p> <ul style="list-style-type: none"> - In Cameroon, the palm oil production area is limited and has been already deeply studied by Raymond. The reflexives “experts” will help focus on a set core of indicators and define the sampling size for T1.4. The grain for the analysis of cropping systems in Cameroon may be coarser than that in Indonesia, given the project first focus on Indonesia. However, the results of Raymond’s thesis and the complementary information carried out within SPOP should be relevant to provide key elements for adaptation strategies towards sustainable production. - In Indonesia, Sumatra had been first identified within SPOP as the relevant area for the study. From the discussion, it appeared that the province scale would be more relevant, especially the provinces Riau and Jambi. Indeed, the North Sumatra province was the cradle of palm oil development in Indonesia and hence has the longer history of production with a great diversity of cropping systems. However, unlike in Riau and Jambi provinces, the issue of

new planting and land use competition is no longer pregnant in North Sumatra. In both Riau and Jambi provinces, diverse cropping systems can be found as well as new on-going or planned planting. Impacts related to land use competition, improving cropping systems, hiring manpower and trans-migrants are particularly relevant. SPOP would also benefit from very active partnerships with local research and institutional partners in these two provinces.

Potential bottlenecks/opened questions:

- RSPO might be in jeopardy after Gapki got off and with the development of national Indonesian guidelines ISPO. However, RSPO is not the studied object of SPOP but rather a potential "user" of SPOP results. Hopefully, SPOP results might underpin the maintaining and further reinforcement of RSPO P&Cs.
- Malaysia would also be an interesting field for SPOP but it was not included in the project budget. It might be suitable for further research work in case the project is extended. Kalimantan was also briefly mentioned, but also is currently out of reach of the project due to budget limitations.
- Importance to cross-checked the information to avoid bias due to intermediates
- It is paramount to inform local partners and institutions about SPOP asap. People from Rainforest, Ph. Guizol (CIRAD B&SEF + working in Indonesia at the BAPPENAS office (minister of plan)), and others might help us contacting the right people.
- Conditions in the diverse Indonesian provinces are very contrasted and evolve quickly; we have to be aware that modeling work (WP2) may only help identify key factors in land use changes and palm oil development scenarios without aiming at a robust modeling reproducible at larger scales (temporal and spatial).

Decisions	♦ Review: benchmarking of on-going projects related to palm oil production and sustainability assessments.	Responsible people AR/2012-S2
	♦ Institutional concept note on SPOP for CIRAD and INRA web page	AR/2012-S1
	♦ Communication cell:	SPOP coordinators
	- via the CIRAD web page and communication tools such as publications (Graines d'info, CIRAD annual report etc.): what we know about sustainable palm oil, what we do not know and what we seek for	
	- via the CIFOR communication team which is very efficient	Contact to be taken by LF
	- SPOP web page with public and logged-in accesses: importance to organize a collaborative space to share documents	CB + B. Girardot/2012-S1
	♦ Steering committee: an invitation letter presenting SPOP will be sent to the institutional representatives and scientific department directors of the diverse partners + institutional representatives of local partners. Members of this committee will be then informed about SPOP updates and potentially provide feedbacks on a yearly basis.	SPOP coordinators with the help of local contacts
	♦ Technical committee: conveying the people responsible for SPOP tasks and other key players (same people as the one present at the kickoff meeting incl. some absents) will meet every quarter of year (1 st Thursday in the month)	
	⇒ Next meeting Thursday 7. June 2012, 9 am (Paris time)	

	Tasks	Country	Year - semester	Supervisors	Objectives
Interns (not exhaustive)	I.1 T1.1 + T1.3 validation of the assessment grids by experts during reflexives "expert"	Cameroon	2012-S2	CB+SR? (+RN, PL, LF)	Reflexives "experts" to validate the set core of indicators of the assessment grids (+ define the district in Cameroon for T2.1)
	I.2 T1.1 set core of the assessment grids and sampling area for T1.4 +T2.1	Indonesia	2012-S2	PMB (+SR, MPC, CB)	Review of existing indicators and selected approach within WAW, historical data and literature mining to refine the grids and precise the study zones and sampling sizes for T1.3 et T1.4 (Riau + Jambi?) and T2.1 (district in Indonesia)
	I.3 T1.3 reflexives to validate the assessment grids with local actors	Indonesia	2013-S1	EC + MD Potentially 2 interns with one from Indonesia	Reflexives to complete/validate the assessment grids with local actors (+ analyzing the perception of global changes by local actors)
	I.4? T1.4 assessment	Cameroon	2013	RN (+SR?)	Assessing the 3D impacts of the diverse cropping systems
	I.5 T1.4 assessment	Indonesia	2013/4	CB (+MPC, SR, PMB)	Assessing the 3D impacts of the diverse cropping systems
	I.6 T2.1 global scenarios	Indonesia	2013-S2	LF (+PL, RN, an intern, PhD student at INRA)	Defining the global scenarios
	I.7 T2.2 + T2.3	Indonesia	2013/4	Ph.D. student at INRA (+JW, JMR)	Model build-up and land use scenarios modeling.

Documents to be uploaded on the web:

- 7 power points as pdf (AR, CB, BD, PMB, EC, LF + PL, JW) + CV + Thesis project of RN as pdf

SPOP
2012-2015
Kick-off meeting
07 June 2012
Minutes
Cécile Bessou
Alain Rival


Participants : Alice Baudoin AB, Cécile Bessou CB, Pierre-Marie Bosc PMB, Marc-Philippe Carron MPC, Emmanuelle Cheyngs EC, Laurene Feintrenie LF, Sylvain Rafflegeau SR, Alain Rival AR, Julie Wohlfahrt JW (visio).

Absents : Jean-Pierre Caliman JPC, Marcel Djama MD, Claude Jannot CJ, Patrice Levang PL, Jean-Marc Roda JMR, Aude Verwilghen AV

Agenda	07 June (9am-1pm)	Updates on administrative points	Updates on LF's mission, INRA's Ph.D. student by JW, EC's intern, project benchmarking by AR	Terms of reference of AB's internship	Updates on SPOP webpage	External communication on SPOP
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Updates on administrative points:

- C3 accounts were opened for each CIRAD agent member of SPOP. Each one of them must check and manage the declared time of involvement in SPOP. The signed attestation of budget agreement was sent by ANR on May 21. But the money has not been yet transferred to the partners.
- Contact was taken with the CIFOR communication cell that agreed to communicate on SPOP updates through their webpage and potentially more, e.g. editing and layout of info-brief.
- Publication of a SPOP article in *Graines d'info*; mention of SPOP in *CIRAD 2011 report*.
- Some activities of SPOP are accounted for within the frame of the component C5 of the CRP6

LF's mission to Cameroon:

- LF will be in Cameroon for 7 days starting on June 13. She will discuss with Raymond about his coming report on palm oil (PO) in Cameroon. This report will present the history of PO development in Cameroon, the typology of PO production systems including the types of contracts, their assets and limits, and the state of the art of the commercial supply chains with particular emphasis on gender issues. One important discussion point will be to check how deep the analysis was especially in terms of collected data and figures about industrial processes. Raymond will be in Indonesia between 09.2012 and 01.2013. LF highlighted the importance of two contacts in Cameroon, the WWF national coordinator of PO, and SNV, a Dutch NGO working on PO in Cameroon and RDC. During his stay in Cameroon LF will discuss with Patrice Levang (PL) about the possibility to supervise together with PMB an intern to apply the WAW methodology in Cameroon for PO.

INRA's Ph.D. student supervised by JW:

- One candidate was selected, Margot Moulin (from ENSAIA); her first field work period should start in April 2013 for 6 months. It would be interesting for her to attend the CIFOR workshop in September 2013 and the annual CIFOR meeting in October 2013. There are still precisions to be defined together with Jean-Marc Roda on the spatial resolution of the Ph.D. study: i.e. focus on the diversity of the palm oil systems (one of the objective of the project) and a precise resolution, or focus on the further PO development potentially analysed at a larger scale. The choice depends both on the objectives and the available data. The supervisors must also decide on the modelling tool and corresponding formations for the Ph.D. Financial support is available at INRA for these formations.

Discussion points

Internship supervised by EC:

- EC will supervise one student on sociology focusing on the diverse stakeholders' perception of global changes, the multiplicity of actors and perceptions of PO. The intern could be specialized in visual sociology, i.e. using the image as a research object being a reflexion of the diverse perceptions. EC and LF explained how interesting it would be for the diverse interns to have common field work periods to allow for complementarities (esp. agronomy and sociology) and solidarity. Also EC's intern should attend the workshops organized by LF and her intern. Moreover, it was emphasised that interns should not be based within an agro-industry but rather in villages and also welcome in CIFOR offices by time to time, they should take a 2-week Bahasa courses.

Benchmarking by AR:

- AR presented a concise overview of ongoing projects in Indonesia relating to PO (ACIAR, ZSL, POTICO, SAFE projects). A page on project benchmarking will be added in the Documents-page of SPOP webpage to ease further updates.

Internship of AB:

- The objective of AB's internship is to make an "exhaustive" literature review of PO development and current productions in Sumatra in order to more precisely delineate the fields in Riau and Jambi provinces for SPOP activities. Based on scientific publications, reports from institutions or interns, AB should be able to track back the PO development strategies, the diverse production systems and influence zones, the diverse issues (socio-economic, environmental...) and identify the data availability for the 3D assessment (and possibly for the INRA's Ph.D.). The conclusions of her report should help delineate and justify the choice of fields for SPOP activities, and identify available data and local partners. The ToRs written by PMB were discussed and should be amended. Ab's report will be written in English.

Decisions

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|--|---|
| <ul style="list-style-type: none"> ♦ Internship: a proposal is made to LF and PL for an internship in Cameroon to apply the WAW approach. ♦ Communication cell: <ul style="list-style-type: none"> - SPOP concept note was approved and can be disseminate to the partners for publication on their web pages - SPOP web page: project benchmarking page must be added, the collaborative space should consist of a blog to discuss, a download/upload space and a google.doc - Documents on WAW should be post on SPOP webpage ♦ Steering committee: an invitation letter with SPOP concept note will be sent to the institutional representatives and scientific department directors of the diverse partners | <p>Responsible people
PMB/2012-06-14</p> <p>asap by the diverse partners involved
SPOP coordinators</p> <p>PMB + CB
SPOP partners + SPOP coordinators with the help</p> |
|--|---|

- + institutional representatives of local partners. Members of this committee will be then informed about SPOP updates and potentially provide feedbacks on a yearly basis.
- ♦ The first report to ANR must be delivered by September 2012; it will be asked to each coordinator of tasks and WP to provide a brief report on activities and plans by September 15. (To be confirmed by coordinators in function of ANR response)
 - ♦ Technical committee: conveying the people responsible for SPOP tasks and other key players
- ⇒ Next meeting Thursday 27. September 2012, 9 am (Paris time)

Resource people for AB internship	Na- mes	Competences	Fields	Documents	Bahasa	Further comments/contacts
	PMB	WAW approach: agriculture analysis and typology based on livelihood approach and indicators on farm structure and transformation processes....	Africa?	WAW documents, Farm structures and typology based on socio-economic approaches...	No	No experience in PO...
	MPC	Soil fertility, PO cropping systems. Co-supervisor of Duryat, intern in Indonesia on PO...	Indonesia	Duryat's data and report....	No	Recent experience in PO...
	SR	9 years in Cameroon. PO cropping systems, Smallholders' PO productions, Agronomic diagnosis, Land tenure issues. Co-supervisor of Duryat....	Cameroon Indonesia	Duryat's data and report Documents on PO in Cameroon	No	Dynamics of plantation around Libo in Riau province: Who's buying scheme plantations? Who's planting "independent plantations"? Report in English with 12 cited references in Bahasa
	LF	4 years in Indonesia, Jambi province, at CIFOR. Transition forest-rubber-PO, PO productions...	Indonesia Cameroon	See dropbox documents	Fluent	
	EC	4 years in Ivory Coast. Impacts of PO privatisation, RSPO process, smallholders' perceptions and roles, levers... Supervisors of 2 interns: names?	Ivory Coast Indonesia	Interns' reports?	?	
	JW	1 year in Indonesia Cartography, Multi-agent modelling...	Indonesia		notions	
	CB	Environmental assessment methods: indicators & LCA	Indonesia		No	
	AR	Coordinator of PO activities for CIRAD			?	Contacts for PO actors at CIRAD and in other institutions/countries...
	CJ	Agronomy and socio-economic analysis of palm oil production systems	Ivory Coast	Contact per mail		
	AV	Currently PhD in Indonesia (Riau and Bangka) in large scale OP plantations (biodiversity / landscape and integrated pest management). Previously working on OP plantation development project in Africa (EIA and HCV assessment)	Nigeria Indonesia	Contact per mail	notions	Hubert.omont@cirad.fr can also provide further contacts or documents
	JPC			Contact per mail		
	PL	30 years in Indonesia. 2 years in Cameroon where he is now: Transmigration; Agroforestry; Palm oil production socio-economic analysis	Indonesia Cameroon	Contact per mail	Fluent	
	JMR	Economist and analyst of wood and other forest product chains.	Malaysia	Contact per mail		

MD

Documents to be uploaded on the web:

- CV of AB+ Internship ToRs
- Documents on WAW

Documents to be uploaded in the dropbox:

- LF documents