

The Global *Jatropha Curcas* Hype: What can we learn from the boom and bust of a miracle crop? ¹

Date

(18-)19-20 June 2014

Venue

Muntgebouw, Leidseweg 90, Utrecht

(Wednesday 18th of June)

On Wednesday 18th of June 2014, the international participants of the conference, together with the organizers, met for an informal welcome in Utrecht. All those present introduced themselves shortly, explaining how they started working on *jatropha*-related topics and the specific areas of focus in their current work.

CONFERENCE DAY 1: Thursday 19th of June

Opening

On Thursday 19th of June *Annelies Zoomers* (Professor of International Development Studies, Utrecht University/ Chair of LANDac) opened the formal part of the conference, organized by International Development Studies (Utrecht University), LANDac, Van Vollenhoven Institute (Leiden University), Addis Ababa University, Hivos and BothENDS, and organized with financial support from the Netherlands Organisation for Scientific Research (NWO). Zoomers stressed that already a lot is known about the rise and fall of *jatropha* as a biofuel crop, but mainly from national perspectives. Today's conference offers the possibility to systematically compare the experiences from different countries. From these comparisons, lessons can be drawn on what is needed to make *jatropha* a winning solution for local farmers? And looking beyond: what can we learn from the *jatropha* case for the introduction of other new crops and for agricultural innovation as a whole? How about land rights and competing claims on land? Also, it is interesting to look at the hype as such: was a hype needed to get the funds and the attention for research into *jatropha*?

After the opening remarks, short introductions were given by *Aklilu Amsalu* (Department of Geography & Environmental Studies, Addis Ababa University) and *Gemma Betsema* (Coordinator of LANDac). *Aklilu Amsalu* talked about the production process of the special *jatropha* issue of the journal *Sustainability* ("The Global *Jatropha* Hype—Drivers and Consequences of the Boom and Bust of a Wonder Crop"²). *Gemma Betsema* explained the agenda of the conference, with on the first day researchers from different parts of the world sharing their findings. On the second day of the conference, different stakeholders would join the discussions and share their views on and experiences with the *jatropha* hype.

¹ This report was written by Roeland Muskens, WiW - global research&reporting Amsterdam/Haarlem and edited by Gemma Betsema, LANDac

² http://www.mdpi.com/journal/sustainability/special_issues/wonder-crop

The morning session was organized around a number of country presentations based on ongoing long-term research programmes: Indonesia (“JARAK: the commoditization of an alternative biofuel crop in Indonesia” of the KNAW/NWO Agriculture beyond Food programme), Ethiopia and Ghana (CoCooN Jatropha Research Project), India (MVI Programme ‘Responsible Innovation’), Kenya (Research Programme ‘Development as a Trojan Horse? Foreign large-scale land acquisition in Africa’), Tanzania (PhD project ‘Socio-economic impact of biofuels in developing countries’; different other research programmes), and Mozambique (different research programmes). The country presentations served to provide an overview of the most up-to-date knowledge, bringing together research findings from a number of long-term programmes in different countries.

Indonesia

Presentation by Jacqueline Vel and Suraya Afiff (JARAK). *Jacqueline Vel* introduced the Agriculture beyond Food (AbF) research programme, explaining how the programme was rooted into the idea of a bio-based economy, with considerations for people, planet and profit (PPP). Vel stressed that the JARAK-jatropha research goes further than just stating that jatropha failed to deliver. Researchers look into in what went wrong, and why, and what were the forces behind the boom and the bust. What was, for example, the role of foreign investors? What interests lie behind the narrative of the ‘empty lands’. JARAK researchers have analysed the jatropha cycle within the historic context of other land-use projects: cashew, sorghum, cattle, etc. How do jatropha projects fit into these land-use cycles? The research did not only focus on the perspectives of farmers, but focused on all actors involved in these projects with their various goals. Studying the jatropha hype from the viewpoint of the subsidies and benefits available for several stakeholders turned out to be revealing.

Suraya Afiff continued the JARAK presentation with a sketch of the Indonesian context of the biofuel revolution: the Indonesian energy dependency, the fossil fuels subsidies, the particular geography of the archipelago with many islands making transportation a challenge. Afiff explained how jatropha was put forward as a biofuel crop and how it interacted with the main non-food, oil rich crop in Indonesia: oil palm. Oil palm production is controversial as there are questions regarding sustainability and food security as growing oil palm uses primary lands previously in use to produce food crops. Embedded in a narrative of marginal lands, or empty lands, jatropha was thought to avoid similar criticism.

Ethiopia

Presentation by Fekadu Adugna Tufa (Ethiopian CoCooN Jatropha Research Project). In his introduction about jatropha in Ethiopia, *Fekadu Adugna Tufa* presented several jatropha projects, that were started up in the first decennium of this century and ceased – or transformed – their operations only a couple of years later. A case in point was the Imami Biotech Jatropha Plantation, an Indian based company acquiring 11.000 hectares of land for a jatropha plantation. Only some 1.100 hectares of the acquired land was cleared and used as a showcase for the Ethiopian biofuel revolution. Three years later, the project was abandoned because of conflicts over natural resources, unmet promises, and general disappointments about yields. Large parts of the land were soon invaded by pastoralists. Other enterprises followed a similar disastrous development, though in some cases project-owners or managers were able to continue the operation shifting to other crops.

In Ethiopia the jatropha boom-bust can be seen against the background of the government policy of giving out state-owned land for large-scale agricultural investment. Biofuel was one of the sectors given priority by the government. The Ethiopian target for biofuel production (mainly from jatropha and castor) was 1.6 million tons annually.

Some of the explanations for the failure of jatropha-projects in Ethiopia:

- Land was acquired without the prior consent of local communities;
- There was no investigation done on existing land-use...
- leading to the perception that land was not in use;
- Jatropha had no reliable track record;
- The social accountability of the operations was low.

Ghana

Presentation by Richmond Antwi-Bediako (Rural Environmental Care Association). Rapid increase of fossil fuel prices and the EU-blending target led, between 2005 and 2010, to a land rush in Ghana by jatropha companies, *Richmond Antwi-Bediako* explained. In that period 17 jatropha companies were identified, who together acquired over 80,000 hectares of land. Less than 10 per cent of this area was actually cultivated. Only three of the identified jatropha-enterprises established their operations in accordance with government regulations.

The jatropha-hype in Ghana occurred without fitting legislation. The Renewable Energy Act was only passed in Parliament on the 31st of December, 2011, when the boom was already over. Often projects resulted in conflicts; not only between local stakeholders and the investing company, but also internal conflicts, mainly between local chiefs.

In 2014, researchers returned to 5 of the 17 Ghanaian jatropha projects, finding that two of the projects were abandoned, two others had transformed their operations, shifting to other crops, and one project showed a mixed image of abandonment and transformation. According to researchers in Ghana, the causes for the jatropha boom can be found in the urgency to solve the eminent fuel crisis, the promotion of jatropha by NGOs, and the national political pressure. The jatropha bubble bursted under the critique of international NGOs and local communities, the lack of knowledge on jatropha agronomy, poor set-up of projects, the lack of a jatropha market, and finally the relative stability of fossil fuel prices.

Lessons from the Ghanaian case can be summarized as follows:

- Comprehensive policies are needed to support clean renewable energy;
- Cooperation must be sought with local stakeholders;
- Conflicts can be reduced by maximum transparency and accountability in land acquisition.

Short discussion followed the three presentations, focussing on questions regarding the similarities and differences between the three countries.

An important similarity is that in all cases little attention was put on informing and consulting local communities. Also the synchronicity of the three cases is noteworthy. Hypes occur when several circumstances come about simultaneously: the presence of green investors, the challenges of a bio-

based economy, climate considerations, dependencies on fossil fuels, the perceived availability of marginal lands. Questions were voiced regarding the possible role of international agencies like FAO; similarities and difference between the roles of local actors in jatropha; the effects of blending mandates in developed economies (like EU en US); and the possible mitigating effect of local policies on the uncontrolled jatropha hype.

After the **coffee break**, four more country introductions followed.

India

Evelien de Hoop (Eindhoven University of Technology) presented the case of Hassan Biofuel Park in India. This project aims not to repeat the mistakes causing most other Indian biodiesel projects to fail. According to De Hoop, the Hassan project is the best India has to offer at the moment. It is small-scale, focusses on biodiesel crops as a hedge crop, and therefore it does not compete with food crops. Because crops such as *pongamia* and *jatropha* are already in place, the Hassan approach allegedly requires little additional investments from farmers and only little extra labour input. And the trees do not need much water. In practice, however, the crops do need enough water to survive the first one or two years, as well as for bearing fruits. Also, the edges of farmers' land are often not actual 'idle lands' and were, for example, used to provide fruit, timber or biomass fuels for the brick making industry. Another competing claim for some of the crops is that the nuts are used in the soap making industry. Over the past 5 to 10 years, seed collection for soap making decreased.

Kenya

In her presentation *Froukje Krijtenburg* (VU University Amsterdam, Anthropology Department) explained that the arid or semi-arid conditions in Kenya created high hopes for jatropha. The production of biofuels fitted in the agriculture based development plans that were developed with the aim to transform Kenya into a middle-income country by 2030. Especially development NGOs promoted the use of jatropha in a smallholder setting. Detailed knowledge about the characteristics of the shrub in Kenyan circumstances, however, was lacking. In the end, a large majority of the farmers were highly disappointed about the yield and the market options for the seeds. Despite this, there are jatropha projects still operational. For example an out-growers scheme that was set up, and funded by a Norwegian NGO. In this specific project jatropha is intercropped with other crops. The biofuel produced is offered to the farmers themselves or can be used in the fish-cooling industry.

Tanzania

Janske van Eijck (Copernicus Institute of Sustainable Development, Utrecht University) started with a brief overview of the jatropha sector in Tanzania. In 2008 there were thirteen jatropha projects going on in Tanzania, all with strong links to foreign actors (NGOs, private companies, governments). By that time less than 5,000 hectares was brought into cultivation. The vision was, however, that this would expand into some 700,000 hectares by 2018. Four years later, many of the schemes had ceased their operations. In Tanzania mainly two types of business mode were developed: plantations and smallholder models. The local economic impact of jatropha schemes in both smallholder models and large-scale plantations is relatively low. Jatropha plantations can potentially contribute to employment, but there is a substantial risk of negative impacts through loss of land rights after discontinuation. Farmers in Tanzania knew the jatropha shrub as a fence. To find

commercial use for the (toxic) seeds was a bonus for them. On the role of the government, Janske van Eijck stressed that until 2006 the government had no policies regarding jatropha cultivation. Later, a Biofuel Taskforce was set up and sustainability guidelines were developed. After 2011/2013 new investments were halted.

Mozambique

Maja Slingerland (Plant Sciences, Wageningen University) sketched the situation in Mozambique where jatropha projects for a considerable part were funded with Dutch money. For the Dutch government, climate change considerations were an important factor spurring the interest for import of Mozambican biomass, while at the same time bringing economic development to Mozambican rural areas. Dutch NGOs, in turn, focussed on bringing sustainable energy to marginal areas. And companies, looking for a return on investment, were motivated by EU blending targets. In other words: the Mozambican situation was characterized by many (foreign) actors with diverging goals. The Mozambican government was interested in reducing fossil fuel imports, in developing marginal lands and reducing unemployment. It was presumed that jatropha, being toxic, would not compete with food.

The jatropha hype was fed by simultaneous developments, starting with the 2004 government directive that each district in Mozambique should plant five hectares of jatropha. Later, jatropha was chosen as one of two preferred biofuel crops and the government started handing out free oil presses. Projects were funded by the Netherlands Enterprise Agency and others. Even after 2007, when the first negative reports had come out, the hype continued. Afraid of losing initial investments, companies continued operations; researchers kept on focussing on jatropha, keeping it on the agenda. Nobody reacted to the new, sobering data about the low yields of jatropha.

At the same time, according to Slingerland, there is a second chance for jatropha, provided some conditions are met: the most important one is that better, high-yield varieties, with synchronized fruiting and detoxified nuts are developed. Also, the agronomy needs to be sorted out: appropriate water and nutrient management and adequate pruning are required.

Slingerland also addressed land issues. A serious problem was that 'empty' land in reality was not empty. Methods to identify land were not precise enough. There was also a conflict of interest: the government was interested in developing marginal areas, whereas companies wanted to operate close to the harbours and other infrastructure in order to reduce transport costs. Companies often did not follow the regulations for acquiring land. Customary usufruct rights were not taken into account and there was no 'free, prior and informed consent' (FPIC). Local communities were often not aware of their rights (for example their right to be compensated), or lacked the bargaining power to strike a good deal. The distribution of benefits between and within communities also led to disputes.

The situations around jatropha in the seven countries showed patterns and differences between experiences in various contexts. The discussion that followed focused on these patterns and differences. Some issues coming out of the **discussion** include:

- Researchers play a role as well when it comes to starting and continuing hypes; it is important to recognize this role and decide on how to deal with this.

- Also important is to see who decides on research agenda's. When launching specific calls for proposals, research-funding agencies for example, influence the type of projects that are being funded.
- And the role of research institutes should also not be neglected: how do these institutes communicate with other actors? For example, much research was already being done into yields of jatropha and showed that earlier estimates were too positive; however, this didn't seem to caution government policies and investors.
- Intellectual property rights issues need to be taken into account. When jatropha research is being done, but outcomes are not shared among all actors, informed decisions are still obstructed. At the same time, one can argue that in case research is funded by public money, outcomes and results should be made available to the wider public.
- Much can be learned from comparing business models: for example experiences with large-scale plantations versus out-grower models that include (sometimes large numbers of) smallholder producers. Different business models show different benefits and disadvantages for different groups of stakeholders. By systematically comparing the models, good practices and preconditions that allow benefits for all stakeholders can be identified and scaled up.
- When comparing country cases it can be seen that there are countries where a strong foreign influence plays a major role and other countries where domestic forces are leading the developments. Different drivers also mean different entry points for policies to influence the outcomes.
- It is also interesting to compare weak states with strong states, or states with a laissez-faire policy with states that adhere to strict planning (for example Indonesia/India with Tanzania/Ghana).
- NGOs play a role, both in the creation of the hype and in the bust of jatropha in most countries.
- And in different national contexts, different local actors played important roles. In the Ghanaian case, for example, local chiefs influenced the process. In Indonesia, on the other hand, local elites played a role. It is interesting to compare these different stakeholder groups; can the role of local chiefs in Ghana be compared to the role of local elites in Indonesia?
- A holistic approach is essential, including a focus on land issues, on socio-economic issues, on governance issues, and on agronomic issues.
- Multiple and flexible motivation for jatropha projects have been used: climate concerns, dependency of fuel imports, blending targets, rural development, use of 'empty lands', budget concerns, earning foreign currencies, return on investment. Different actors have used different underlying motivations for supporting jatropha.
- Given the high cost for the production of biofuel from jatropha: will it in the foreseeable future be able to compete with fossil fuels? And at what level and for what end-users?
- What situation remains after jatropha projects have failed? In terms of land governance, for example, land rights were transferred away from smallholder producers, often first to the government and then to companies. When projects fail, such land rights are seldom returned to these smallholders, and often remain in the hands of governments.
- What is the concept of 'marginal land'? It is essential that existing usufruct rights are well-studied before any project is started. In practice, 'idle lands' do not exist. Often these type of

lands are being used precisely by those groups who are the least equipped in terms of economic, social and political capacity, to oppose investments or strike a good deal out of it (for example, pastoralists, shifting cultivation).

After the lunch four **break out groups around central questions** were formed:

1. Enabling frameworks and land governance
2. Who created the hype, how and why?
3. Successful jatropha business models and sources of investments
4. A second chance for jatropha?

The break out groups discussed the **lessons to be learned** from the jatropha experiences presented in the morning session.

Ad 1. Enabling frameworks and land governance

- Ensure that existing policies, rules and regulations are being implemented;
- A strong independent civil society is important: as a watchdog, for mobilisation of people and to build knowledge and improve the bargaining position of local communities;
- Simple and practical certification schemes for sustainable production can be helpful;
- Take anti-corruption measures and ensure transparency of land use and land transfers and acquisition;
- More participation in decision-making is needed: free, prior and informed consent (FPIC) is an important element in this. FPIC goes further than just consulting people, it gives the opportunity to 'say no';
- Undertake due diligence research on feasibility and sustainability before creating (inter) national policies and public funding;
- Start small-scale with pilot projects, especially when vulnerable stakeholders are involved;
- Knowledge and practice gaps are to be bridged between local land users, policy makers, companies, investors, researchers and banks.

In the **discussion** that followed, it was suggested that an effective certification system could have prevented projects to fail: investors would have been prevented to back out prematurely; conflicts could have been avoided. Certification can guarantee market access for smallholders who otherwise would have great difficulty in linking to international markets. On the other hand: certification is only effective if biofuel is exported; and implementation on the ground is considered a major obstacle.

Ad 2. Who created the hype, how and why?

- A hype involves intentionally created expectation and actions;
- The jatropha hype was created by a combination of actors: engineers, governments, NGOs, entrepreneurs, international agencies;
- Both groups of actors and their respective interests at the different levels and across sectors converged at the same time;
- The media played an important role in creating the hype, they framed the story in terms of good, bad, hope, fear, success, failure;

- A hype is not necessary a waste of energy and is sometimes a component in innovation: creates passage for innovation or new ideas and can serve to gather resources, to overcome resistance, etc.;
- Inequality issues are apparent: the actors creating the hype are often the ones benefiting (for example, the smallholder farmers who started to produce jatropha have benefited least).

Missing data were an important factor in the jatropha hype, it was concluded during the **discussion**. And the data that did exist was ignored or interpreted in a way that suited interests.

Best practices are important to learn from, but such practices are often context specific and cannot be extrapolated to other circumstances. Therefore, conditions for success must be made explicit. Researchers should present their findings in a transparent way so that data are easily interpreted and will be cited correctly. Transparency is also needed in research financing: who determines research topics; who sets the research agenda; who benefits? How does a researcher maintain independent in a situation where research is often privately funded, or when researchers have to compete for funding through public funding agencies. Was the jatropha hype partially caused by the fact that independent research and proper testing was not available?

Ad. 3. Successful jatropha business models and sources of investments

Business models

- Many different models are possible; ranging from large plantations owned by one company, to smallholder producers, and every combination in between;
- There are huge variations in level of cooperation and contract specifications;
- A most suitable model is dependent on a great number of variables, including government incentives, population density, land availability, land tenure situation, availability of capital and so forth;
- Problems encountered in different business models include: the lack of experience of the many farmers to really participate (risk of out-grower model) is a problem; when working with large numbers of smallholders, a minimal level of infrastructure needs to be in place in order to transport raw products to a processing facility; land tenure situation (smallholders need a certificate to join out-grower models and face the risk of losing their access to land in plantation models); labour shortage in agriculture and so forth;
- Often, too many non-commercial actors are involved. The ideal situation would be a commercially driven, organic company, involving not too many outside actors. The government would mainly provide an enabling framework;
- Elements of a good business model that were identified include: Jatropha intercropped with other crops, start with a pilot project and include up-scaling options, set a clear objective, engage in location and ex ante impact analyses and adjust.
- An example of a business model in jatropha that has worked relatively well is that of Diligent in Tanzania.

Sources of investment

- There are no pure commercial ventures in jatropha known (they are all in some way or another supported by governments, NGOs etc.);

- Sources of capital are often short-term, jatropha needs a longer term financial input before becoming economically viable;
- There are niches in capital markets where jatropha could profit from: e.g. climate change programmes.

Some **discussion** arose on the context specificity of business models. Local circumstances will make some business models unlikely; for example local subsidies on fossil fuels. A business model should include the use of by-products and waste. And market for end products are very important; reliable data are needed on yields, but when there is no market for the end products good yields will be useless.

Success is ultimately dependent on the goals of a project. Sustainability goals and climate considerations are often forgotten along the way.

Ad. 4. A second chance for jatropha?

- Agronomy: 'It needs to perform, otherwise it isn't a crop'. Higher yields are vital;
- Jatropha is only recommended under specific conditions:
 - when produced for local markets;
 - when clear market opportunities exist;
 - when it fits into existing production systems;
 - when it is supportive to responsible business;
- Jatropha production is only recommended if the complete plant can be used for fuel, food, and within the ecosystem (products: oil, proteins, compost, etc.);
- It can contribute to benefits through its low opportunity costs and the benefit sharing potentials.

Discussion: It wouldn't be the second chance for jatropha, but the third or fourth, because jatropha has re-emerged several times already. To learn from previous mistakes, data rescue from discontinued projects is essential: why did these projects fail?

The high protein content of jatropha makes future use in the food chain an attractive option. And if jatropha becomes a viable option, intellectual property rights will become an issue. Because yields are crucial: who will control the high yielding varieties?

A next chance for jatropha also depends on context: trust in the crop within farmer communities; market possibilities (e.g. price level and availability of alternatives). Note that opportunity costs are not zero; not even in marginal areas. Also labour does not come for free, even if labour is not priced: labour is always valuable.

Reflections by Carol Hunsberger and Bart Muys

In her closing remarks, *Carol Hunsberger* (University of Western Ontario, Canada) concluded that the jatropha hype was triggered by three factors: convergence of interest of different actors on different levels; the promise of the sustainability of jatropha; and the flexibility of the jatropha discourse: easily shifting from one rationale to the other, providing arguments for all stakeholders.

Often, land was acquired without free, prior and informed consent (FPIC). In the case of smallholder production schemes situations of 'land *control* grabbing' can be discerned, where not the physical access to land is transferred, but rather the decisions about ('control over') land are transferred. And in the case of large-scale plantations, companies often acquired access to land through long-term leases. When these plantations were abandoned or transformed after a few years of operation, smallholders never re-acquire access to that land.

Stakeholders are happy to communicate success. Failure is often kept silent. A challenge is to stimulate stakeholders to communicate both success and failure, so others can learn from those experiences.

Bart Muys (KU Leuven, Belgium) summed up some of the main issues raised today:

- An interdisciplinary perspective is vital to learn from experiences;
- Triggers and drivers of the hype include bio-based economy objectives, climate mitigation, poverty reduction, food vs. fuel debate, high fossil fuel prices, use of marginal lands, attracting foreign investment, employment creation, media stories; local people paid the price;
- Data availability is a problem: reliable data is lacking, is not shared or not accessible;
- Marginal land is often considered to be idle land, but this is never the case. There are always existing land claims, traditional uses, etc. Often land deals came about without applying a process of free, prior and informed consent (FPIC) locally, so more transparency is needed;
- The role of NGOs is unclear: some NGOs were unable to take a position, others opposed jatropha prospects without clear motivation;
- Market information was often lacking or based on circumstances in other contexts; business plans have been based on unrealistic market perspectives;
- Yields from marginal lands were much lower than promised, primarily caused by the fact that jatropha is a 'wild', unimproved species; soil fertility and water requirements were higher than originally thought; and the fact that fruiting is not synchronized;
- Hypes can be useful for a regime shift, but will only lead to benefits when the regime shift is successfully stabilized (which did not happen in the case of jatropha). The current academic culture stimulates active creation of hypes in response to our economic model that focuses on good news, optimism and growth;
- Better communication is needed between academia and other actors. Failures also need to be communicated in order to learn from those. Best practices can be important, but are always context specific. Knowledge is only valuable if it is shared;
- Business models were often ill chosen (wrong sites, wrong plant material, creating conflicts, without social accountability). Elements of good models include: intercropping, working with smallholders, doing ex ante impact analysis and starting with pilot projects which can easily be adjusted based on 'learning by doing'.
- Beyond the hype would include the shift of jatropha from a promising cash crop towards a source of side income; one solution in a local sustainable energy mix.

CONFERENCE DAY 2 - Friday, 20th of June

Opening the second day of the jatropha conference, *Annelies Zoomers* welcomed, in the name of the organising institutions, all participants. The first day of the conference, people from a wide range of academic institutions, from different countries, and involved in number of jatropha-related research programmes, presented their views on what really happened, and why, and who were involved. Comparing experience from different countries; but also focussing on what happened after the hype? Were plantations abandoned? Were new crops introduced? How were conflicts resolved? Most of these presentations were based on research programmes that have been running for a longer period of time and financed through the Netherlands Organisation for Scientific Research (NWO).

Cases from India, Indonesia, Kenya, Tanzania, Ghana, Ethiopia and Mozambique were presented. These cases show many similarities but also differences. Interesting deciding differences are, for example, the nature of the state (strong or weaker). Local oil need is a differentiating factor. Also the initiators of jatropha enterprises are an important factor: are they local or foreign, private or public, are NGOs involved or academics? And similarities are also striking: the hype was global, affecting all countries; all countries faced the sudden attention for jatropha and were confronted with opportunities. Money was easy. Also academics follow hypes: where there are hypes, there is money and room to manoeuvre. Globalisation makes it possible that actors along the globe follow the same information. Circumstances, however, vary and that makes it tricky. There is a certain mismatch between the actors promoting the hype and (local) market circumstances. And finally a common feature is the miscommunication between private enterprises and local actors. Benefit sharing arrangements were not well developed.

But looking back is not enough. We must also look forward: what recommendations can we formulate for future developments? That's why this second day of the conference is targeted to a variety of stakeholders: academia, NGOs, investors, end-users, the private sector, government etc.

The first round of presentations and discussion were moderated by *Aklilu Amsalu* (Addis Ababa University).

Carol Hunsberger (University of Western Ontario, Canada) did research into the social impact and governance issues related to biofuel production in Kenya. As 'food for thought', Carol Hunsberger invited all present to imagine what we would be thinking if jatropha had turned out a great success. How would success have been defined? Would sustainability be a leading issue?

How to make sure that jatropha is considered a means rather than an end in itself. Jatropha has been promoted in the fight against climate change and against rural poverty. In the practice of jatropha projects, however, these goals almost disappeared. Jatropha became a means, rather than an end. The evaluation of jatropha projects should start from the actual goals that were formulated at the beginning. As jatropha was promoted with a whole range of arguments, evaluating the performance of the crop could be a 'messy process'. The most recent jatropha discourse focuses around flexible end-products and by-products: jatropha is very rich in proteins and is suitable for fish food.

Kees Kwant (Netherlands Enterprise Agency) gave an overview of the Dutch position in international biomass trade, being both an important importer and exporter of bio-oil and -fats. To stimulate sustainability a program was set up in 2008 to stimulate production of sustainable bio-energy in the global South: 40 projects were supported in 20 countries; 15 projects focused on jatropha. Reviewing the projects some conclusions can be drawn: don't focus on export, take possibilities for local use into account; yields were generally low: less than 600 kg seeds per hectare (200-250 liters of oil); start small, focusing for example on jatropha hedges.

An overall conclusion is that jatropha is no solution for the biomass needs of the Netherlands. This implies that the Netherlands should: a. focus more on local production (e.g. beet sugar), b. look at other imports (e.g. palm oil), c. find other solutions (e.g. energy saving).

In his presentation 'What can we learn from the boom and bust of jatropha', *Flemming Nielsen* (Banana Hill/ Hivos study team) mentions the lack of proper research results as one of the factors that caused the boom. Donors were not interested in financing research, academic institutions were not interested in doing research for NGOs; so serious research only started in 2008. After 2010 the boom was over, financing stopped and pilots were discontinued. The result is that most jatropha literature is very superficial with authors all quoting the same unverified data, little long-term research, and only a few on-farm trials. In spite of the limited data, Nielsen is optimistic about jatropha in certain conditions: only in marginal areas where farmers get little money for their cash crops and prices for (fossil) fuel are high. In Northern Mozambique, Nielsen says, the conditions are good; after the withdrawal of development agencies local farmers have continued producing jatropha.

Alda Salomão (Centro Terra Viva, Mozambique/ LANDac) argues that jatropha was not the only 'hype' in the Mozambican development discourse. Other hypes emerged around tourism, national parks (conservation), agro-forestry and currently all heads are turned towards the possibilities of mining and natural gas. A problem with hypes, says Salomão, is that the local government is usually not prepared for the policy challenges surrounding the rapid rise of a new industry. Governments often 'dive in' and only later start developing a strategy and policies. This has, among other things, implications for land issues. In virtually all hype situations local communities have not been consulted in land change and land transfer. Land rights have not been transferred in a transparent and correct manner. Local communities are usually lured by false promises and exaggerated predictions. Salomão recommends more patience and adequate research when evaluating new developments; projects also need an exit strategy and a contingency plan when things don't work out as anticipated.

Hugo Verkuil explained some of the features of his company Mali Biocarburant, working with several thousands of small farmers in Mali and Burkina Faso. Some of the factors that sets Mali Biocarburant apart from other biofuel companies are: the smallholder farmers are shareholders in the company (no hired labour for nut picking), intercropping system (no plantation), using multiple feedstock (both food and fuel). Also the energy produced through this enterprise was targeted for direct local use instead of export.

After a short break four **break out groups** were formed along the same four themes as the day before:

1. Enabling frameworks and land governance
2. Who created the hype, how and why?
3. Successful jatropha business models and sources of investments
4. A second chance for jatropha?

The break out groups formulate **recommendations** for specific stakeholders. The reporting back by the break out groups and the discussion was moderated by Guus van Westen (International Development Studies, Utrecht University/ Co-chair of LANDac).

Ad 1. The hype

Recommendations

- To governments: strengthen governmental and political integrity;
- To all stakeholders: base decisions on solid information;
- To all stakeholders: provide checks & balances;
- To FAO: stimulate worldwide availability of information;
- To R&D actors: integrate pilots and research and start small;
- To investors: start small;
- To investors & financial sector: formulate guidelines or a code of conduct for investments;
- To media and NGOs: rely on and provide evidence-based information (including on social media).

Discussion: Does the dynamics of commercial investors allow for the cautiousness advocated in the recommendations? Investors are not interested in small scale; they cannot operate in an environment that is over-regulated. Governments, NGOs and researchers have other responsibilities than commercial investors. On the other hand: investors need a 'license to operate' if they want to avoid conflicts. Good, solid information and transparency is key.

Ad 2. Enabling frameworks and land governance

Recommendations

- To scientists and researchers: promote open access publishing;
- To governments: rules and regulations should be clear before investors get in;
- To local authorities, governments and semi-public institutions like land registrars: make land transfers and investments transparent through public accessible and affordable information;
- To governments, scientists and indirectly CSOs: strengthen capacities of local institutions, like Environmental Impact Assessment (EIA) inspectors, investment promotion offices, land registrars, land bureaus, chiefs etc.;
- To journalists, NGOs and scientists: name and shame when there is no transparency or there is corruption and report back to OECD, Transparency International etc;
- To donors, European Union, NGOs and scientists: judiciary systems should be reinforced, independent role of justice and enforcement of regulations and human rights should be strengthened;
- To donors and peer CSOs: strengthen local Civil Society Organizations as watchdogs;
- To private enterprises, journalists, governments and scientists: strengthen local capacity to

describe local cases, and feedback to OECD and international platforms;

- To private companies and financial institutions: comply with regulations, rules and policies and terms of agreements, including Corporate Social Responsibility (CSR) and free, prior and informed consent (FPIC).

In the **discussion** it was noted that in times of hypes there is often no opportunity and little interest to maximize transparency. Others stressed the need for south-south information sharing (horizontal communication) on good and bad practices.

Ad 3. Successful jatropha business models and sources of investments

Recommendations

- To end-users: check the track records and the present relation of the companies with the people on the ground;
- To all stakeholders: select the right people and companies with local experience;
- To farmers and local companies: maximize the number of products coming from the crop;
- To jatropha companies: develop a business model which takes into account the local context and social-economic conditions;
- To end users: commit to long-term involvement with primary producers
- To all stakeholders: local communities should have the right to say 'no';
- To end users: get independent information on local culture and social and economic realities;
- To all stakeholders: take enough time to create trust;
- To cosmetics and pharmaceutical industry: promote local business that process non-toxic jatropha;
- To all stakeholders: integrate jatropha producers into the supply chains for the production of biofuel.

Discussion started on the importance of a credible exit-strategy. The experience is that in hype situations companies come and go in rapid succession. Also NGOs sometimes have no exit strategy and too quickly give up when success doesn't come instantaneously. To formulate an exit strategy maybe sounds pessimistic (E.g. Mali Biocarburant: "We have no exit strategy, we are in Mali to stay.")

Ad 4. A second chance for jatropha?

Recommendations

- To potential importers: don't count on jatropha to contribute to biofuel targets... until further notice;
- To potential producers: decide energy supply policy starting with demand (needs), then determine strategy (e.g. guaranteed market);
- To potential supporters of local initiatives: identify candidate places case by case and evaluate alternatives and hidden costs;
- To potential investors: invest in long-term research (not production) and share data.

Discussion. The lack of open access of data and other research results was identified as a problem. R&D departments of companies usually shield off all the progress they make. Reliable data are needed on the minimal conditions (social, geographical, political, physical and agronomical environments) under which jatropha production is viable.

The conference ended with a **panel discussion**, moderated by Annelies Zoomers, with the participation of Kees Kwant (senior expert bioenergy and bio-based economy at the Netherlands Enterprise Agency), Carol Hunsberger (Assistant Professor development geography, University of Western Ontario), Alda Salomão (Executive Director Centro Terra Viva/ LANDac), Paul Wolvenkamp (deputy director BothENDS) and Jan Gevaert (former managing director Eco Carbone Tanzania).

Short opening statements. *Paul Wolvenkamp*: essential is the question if we can bridge the gap between outside companies and local communities. Investment procedures have to be strengthened. *Kees Kwant*: Jatropha is relevant as a renewable resource. But its possibilities are limited. Knowledge is needed to assure sustainability. *Jan Gevaert*: Investors behave like wild beast: they herd. Existing data have to be taken into account. Being responsible towards local stakeholders, an exit strategy must be developed. *Carol Hunsberger*: The discussion is concentrated too much on jatropha. A wider perception is needed, taking questions on energy need and sustainability into account. *Alda Salomão*: How can we use the dynamics of hypes for the benefit of local people? Use the knowledge provided by the hype to develop a sensible way forward.

Some of the issues put forward during the discussion:

- Countries in the South should try not to be swept away by hype dynamics, but place new developments into a clear vision of the future;
- Policy coherence is an issue: donor interests in securing biomass from the global South can easily interfere with development policies;
- There is a mismatch between the interests of the global North and the global South. Biofuels are a means to secure high energy consumption in the global North;
- Mono-cropping for biofuels is contradictory to the development of a green economy;
- Energy saving in the global North and certification of bio-mass from the global South are vital;
- Social criteria must be included in biofuel directives;
- NGOs must assume the role of watchdog regarding the involvement of local communities;
- Local communities are often not unanimous; within communities conflicting interests are possible and likely to exist;
- Securing free, prior and informed consent (FPIC) is a lengthy process;
- Honest brokers are needed to negotiate between local communities and outside parties.

In her closing remarks, *Annelies Zoomers* concludes that the biofuel issue at least has put agriculture on the global agenda. Jatropha is the topic of this conference, but in reality we talk about rural development and sustainable energy. New cooperation and new alliances have been set up. CSR in agricultural investments is on the agenda. Multi-stakeholder platforms are set up. This idea should be hyped!

The jatropha boom and bust was perhaps a violent affair, but it was also a creative process. There is, however a mismatch between the quick dynamics of the hype and the slow growing of the jatropha shrub. How can local rural communities cope with the dynamics of (multinational) rural investors? How can local ideas, experiences and best practices be scaled up?

The story of jatropha has not ended yet. It will also stay on the agenda of LANDac and of LANDforum meetings. A multistakeholder platform on land issues and CSR is being set up, led by the Netherlands Minister of Foreign Trade and Development Cooperation. In June 2015, a LANDac conference on land related issues is planned where jatropha will also be on the agenda.

