



The development of an International Industrial Biotechnology Network: *An interim evaluation*

Commissioned by:

Department of Economy, Science and
Innovation (EWI), Flemish Government

Project:

Interim evaluation 'Facilitator Mechanism
for the establishment of an International
Industrial Biotechnology Network (IIBN)'

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Management Summary

By orders of The Flemish Government's department of Economy, Science and Innovation (EWI), the Dutch consultancy firms Dialogic and InnoTact Consulting evaluated the programme 'Facilitator Mechanism for the establishment of an International Industrial Biotechnology Network' (IIBN).

The Facilitator Mechanism encompasses the efforts required which should lead to the establishment of this network and enable IIBN to operate at an international level. The network itself aims to improve the accessibility of biotechnology in less developed countries and growing economies in order to fight poverty and maintain biodiversity. Know-how of biotechnology from developed countries, like Flanders, can be used for that. In this way IIBN would play its part in the increasing significance of the bio-economy: improving crops for the production of biomass and expanding the potential industrial use of biomass. IIBN will therefore be participating in the transition to a bio-economy. The innovative aspect of IIBN's concept is that it forges links between technological and development cooperation policies: the concept is based on cooperation between on the one hand Western companies, knowledge institutes and governments, and on the other hand parties in those less developed countries that would like to make (more) use of the opportunities in biotechnology. In order to create an international network, and in line with the Facilitator Mechanism, activities are being undertaken which come under three key headings: (i) establish a mechanism for coordination and quality control, (ii) create awareness among major stakeholders, and (iii) set up demonstration (pilot) projects as 'proof of concept'.

These activities for the Facilitator Mechanism are being financed through a trust fund that is managed by the United Nations Industrial Development Organization (UNIDO). The organization carrying out the activities is the Institute for Plant Biotechnology for developing countries (IPBO) – part of Ghent University. The Flemish Government's Economy, Science and Innovation (EWI) department together with UNIDO have agreed to provide the trust fund with EUR 250,000 every year for a period of five years. This was sealed by UNIDO and the Minister for Economy, Enterprise, Science, Innovation and Foreign Trade signing an agreement on 9 July 2009, which will be valid till 31 December 2014. Now, two years after the agreement was signed, the EWI department would like to have an interim evaluation (as foreseen in the agreement) in order to see how the 'Facilitator Mechanism for the establishment of an International Industrial Biotechnology Network' programme is progressing.

The evaluation consists of desk research, interviews with those directly involved and experts on account of bio-technology (due to limited time and means no interviews were held with representatives of government, institutes or companies from developing countries), and a strategic workshop. The various components of the evaluation include an internal analysis – also financial, an external analysis (considering developments in bio-economy), and finally a SWOT analysis. A steering group managed the evaluation, which was conducted in September and October 2011.

Internal analysis

- (i) Establish a mechanism for coordination and quality control

The majority of the anticipated activities have been carried out: the members of the Scientific and Advisory Panel (for IIBN), STAP have been appointed, the launch event took place in Vienna, in March 2010, and the Steering Committee meets regularly to discuss matters such as planning. However, not all the tasks which contribute to the development of a mechanism for coordination and quality control have been accomplished: for example, no clear criteria have been established to assess or rank demonstration projects. Up till now, no demonstration projects have been implemented, and so STAP members have not yet produced a taxation report. Task 1.3B was not included in the original IIBN programme proposal; it was added to the work plan at a later stage by UNIDO. The necessity for a strategic plan has already been acknowledged and the initial steps to achieve this have now been taken.

Schematic representation:

Activities		Status
1.1	Nominate and select candidates for the Steering Committee and STAP	√
1.2	Organise a launch event	√
1.3 A	Formulate socio-economic and sustainability criteria	
1.3 B	Draw up a business plan with socio-economic and sustainability criteria	
1.4	Produce an annual progress report	√
1.5	STAP writes a taxation report	
1.6	Organise a meeting to discuss evaluation and planning	√
1.7	Determine the work plan for the following year	√

√	Task completed
	Task partially completed
	Task not carried out

- (ii) Creating awareness among major stakeholders

A further type of activity that should contribute to IIBN's operation is *creating awareness*. This is for example in relation to the preliminary work that focuses attention on how biotechnology can be applied in growth economies or less developed countries. Another aspect is identifying relevant players (executors and co-financiers) for the demonstration projects. Most of these activities have been carried out (or are at an advanced stage of completion). At the time of evaluation (October 2010), one proposal (ECOWAS) had been submitted to a co-financer, who has approved it. Alongside the activities listed, other channels such as political as well as scientific circles have also been approached in order to focus attention on IIBN.

Schematic representation:

Activities		Status
2.1	Produce policy and technical review papers	√
2.2	Identify a country for the Stakeholder meeting	√
2.3	Define the aims and scope of the Stakeholder meeting	√
2.4	Identify resource persons	√
2.5	Organise and implement a Stakeholder meeting	√
2.6	Identify target areas for Phase II	
2.7	Outline project proposals	√
2.8	Identify 'counterparts' (parties) and their roles	√
2.9	Develop a 'fund mobilisation' concept	
2.10	Produce a report on generating awareness	√

√	Task completed
	Task partially completed
	Task not carried out

(iii) Setting up demonstration (pilot) projects as 'proof of concept'

The initial plan identified two demonstration projects in Bahia (Brazil). Ultimately these projects did not start due to a combination of delayed decision-making, changes in the political scene in Bahia, and diverse expectations regarding the amount of IIBN's co-financing. After that, four other proposals were prepared. At the time of evaluation, IIBN's Steering Committee had approved one project for co-financing, namely 'Strategic analysis of novel bio-energy crops in ECOWAS (Economic Community Of West African States) countries'. Just as the interim evaluation was being completed, co-financing was approved by ECREEE (ECOWAS Regional Centre for Renewable Energy and Energy Efficiency). This ECOWAS project can therefore be implemented in the near future.

Schematic representation:

Activities		Status
3.1	Send project proposals to STAP	√
3.2	Selection (ranking) of project proposals	
3.3	Decide on project proposals to be implemented	√
3.4	Send project proposals to financiers and governments	√
3.5	Finalise agreements regarding implementation	

√	Task completed
	Task partially completed
	Task not carried out

General impression

Although many of the tasks that were determined beforehand have been carried out, the expectations of the Facilitator Mechanism were only partially realised. We have three significant observations of how the activities were conducted:

1. There were delays in carrying out tasks. It is taking a long time for the programme to get underway (start-up meeting was held 8 months after the EWI department and UNIDO signed a contract); further delays occurred particularly due to demonstration projects not being implemented. These delays resulted in:
 - Fewer resources being used than anticipated;
 - People trying to make up for the delay especially by writing proposals for demonstration projects. Their approach was mostly pragmatic (without this necessarily leading to a decline in quality);
 - Less time being spent on actually setting up and expanding an international network for example by: creating awareness with the governments of less developed countries, linking up with other similar initiatives, obtaining recommendations, communication and accomplishing a clear strategic plan.
2. The organisational structure and cooperation within IIBN are not optimal. The system of cooperation between UNIDO and IPBO (whereby financial resources are managed by UNIDO, but IPBO is responsible for day-to-day operations) is not efficient. UNIDO contributed an important part concerning content and organisation, however for the tasks and activities IPBO guarantees (as part of her daily programmemanagement), in general costs need to be advanced. Each organisation and individual's tasks and responsibilities are not sufficiently clear. In addition, STAP members' personal networks are not being fully utilised.
3. What is absent is a solid strategic policy: thus IIBN's aims and strategy are not entirely clear. There is also a lack of a good, shared vision of how IIBN can be developed and how it will function as a network. Partners admit this, that's why they started the writing of a strategic plan.

A general overview of the internal functioning and progress of the programme is summarised in a logical framework analysis.

Financial analysis

For our financial evaluation, we focussed on the concept of financing (multi-donor trust fund and other parties' contributions – also *in kind*). Additionally we conducted a main analysis of how the EWI department utilised resources. Conducting an in-depth audit however, was not part of the scope of this evaluation.

The EWI department has provided EUR 500,000 for the first two years. Of this, EUR 455,876 was for the programme itself; under the agreement between EWI and UNIDO, the remaining amount was provided to UNIDO for support costs. The resources utilised up till now cover the appointment of a programme manager, organising a stakeholders meeting in China, UNIDO project management and travel costs.

We determined that only a part of the amount budgeted for IIBN for the first two years has been utilised and that a considerable part (approximately EUR 270,000) has not yet been spent. This is on account of the fact that the anticipated demonstration projects have not started and consequently the co-financing for these projects has not yet been provided. Although a considerable portion of the resources has not yet been utilised, we do believe that the total IIBN budget is limited in view of the *proposed aims*.

The EWI department's financial contribution is not the only resource that can be applied to enable IIBN to exist; other funding sources can be approached, especially for financing demonstration projects. Moreover, a multi-donor trust fund was provided to actually operate the network (IIBN Phase II). The idea behind this multi-donor trust fund is that several funders contribute to the general operation of the network organisation and projects. There is however a lack of a clear and above all shared vision of this multi-donor trust fund. Up till now, parties have mostly contributed 'in kind', as for example displayed by Chinese parties during the stakeholders meeting in China in early November 2010 (location, catering, etc.).

External analysis

The bio-economy is currently enjoying a world-wide focus, the most important drivers being on the one hand the requirement for durability, secure energy, sustainability and the fear of climate change, and on the other hand the economic potential (Asveld, Est, & Stemerding, 2011). We can speak of global trends (greater opportunities for biofuels, increasing importance of pharmaceutical compounding, new bio-polymers such as bio-plastics and the rising demand for enzymes). These trends, combined with scientific and socio-political developments, can enable IIBN to gain more momentum. This means that not only could IIBN latch onto relevant scientific issues, studies and networks in progress, but also has to be able to rely on the support of (local) governments thanks to the importance of the transition to a bio-economy.

Most of the developments in biotechnology are taking place in developed countries; which is why transfer of knowledge at an international level is so vital in order to develop a global bio-economy. To this end, countries like Germany, also in their own interests, are looking to cooperate strategically not only with BRIC countries but also with African, Asian and South American countries (Bio-economy Research and Technology Council, 2009). IIBN can bridge the gap between the West and less developed countries. Connecting with these countries, however, cannot be taken for granted and requires particular consideration, for example because the infrastructure for developing and adopting technology is not available everywhere. Local industrial chains have to be organised and there is no proper regulatory framework.

Similar initiatives to IIBN are: 'Towards a Latin American and Caribbean Knowledge Based Bio-economy in Partnership with Europe' and the programme 'Global Sustainable Bioenergy' (GSB). Also Western companies are operating directly in the field of biotechnology in less developed countries. And vice versa, companies in these less developed countries are also appealing to Western knowledge institutes.

SWOT analysis

The internal and external analyses show various (internal) strengths and weaknesses as well as (external) opportunities and threats. We have elaborated these in Section 4 of this evaluation according to the following interrelated aspects of IIBN:

- Organisation
- Strategy
- Projects
- Finance
- Visibility

Some of the individual strengths, weaknesses, opportunities and threats were discussed during the strategic workshop held in Brussels on 3 October, 2011. The participants' responses are also included in this evaluation.

The major individual strengths, weaknesses, opportunities and threats are set out in the table below.

	strengths	weaknesses	opportunities	threats
Organisation	participants	organisation control communication		
Strategy	IIBN concept	strategic framework	emerging bio-economy	similar initiatives
Projects	project content	selection process	other on-going projects	limited local financial resources
Finance	cost effectiveness	limited leverage	European subsidies	uncertain EWI resources
Visibility	own networks	profiling	link up with other initiatives	association with controversial biotechnology

Conclusions

Based on the insights gained during the evaluation process, we have come to the following main conclusions:

- IIBN's goal is up-to-date and relevant. The approach chosen for IIBN can contribute to the economic utilisation of Flemish biotechnology on behalf of (small-scale) development of the bio-economy in less developed countries.
- The bio-economy offers additional value in scientific, social and economic terms for both Western as well as less developed countries. IIBN can gain more momentum because the transition to a bio-economy is featuring more and more on the political agenda (also in less developed countries).
- The Facilitator Mechanism to achieve IIBN kicked off with an ambitious agenda. A great deal of work has been done and many tasks have been accomplished. At the same time, up till now the expectations have not been met. This is mainly as a result of (i) delays, (ii) lack of a distinct strategic framework, and (iii) the absence of a good organisational structure encompassing well-defined agreements on control, distribution of tasks and cooperation.
- Trying to clear the back-log caused by the initial delay meant less time has been devoted to actually developing a global network as well as all the pertinent aspects such as communication, defining cooperation, recommendations.
- IIBN's Facilitator Mechanism is intended to develop a global network. It is, however, insufficiently clear how IIBN is set up and practically run as a network and what its objectives are. More attention is needed to make clear how IIBN (medium-term) can be organised and run as a network.
- Building up an international network is a long-term process. It requires targeted deployment and active, effective utilisation of the individual networks of all those

participating, including members of the Steering Committee, STAP and actors within UNIDO, IPBO and other institutes and governments.

Continuation of Flemish support

We recommend the EWI department to continue to financially support the Facilitator Mechanism, but with *certain conditions*. IIBN is not yet ready (as previously stated, creating a network is a long-term process) and at present, the development of the network is still largely dependent on financial support from Flanders. If that support ceases, the chances are small that the network can develop further. Those involved, external experts and participants at the strategic workshop for the evaluation of IIBN entitled 'the golden ambition', emphasised the win-win potential for Flanders as well as for less developed countries, and the unique combination of innovation policies and development cooperation.

Our advice to continue providing financial support under certain conditions stems from our findings that IIBN does have the potential and certainly at this time, to expand into a powerful, global network, but expectations are currently not being met. There are obvious reasons for this, which can be addressed specifically. Thus the main conditions under which financial support should be continued are:

- Organisational adjustments.
- Development of a clearly defined, strategic framework.
- Creation of a more distinct and robust profile for IIBN.

It could also become a condition to involve Flemish companies and institutes more actively with IIBN, and also enable them to benefit from this involvement. Thus, the IIBN as internationally operating network can be expanded further. The unifying role of UNIDO in developing countries remains vital to highlight the IIBN and to stimulate the link between developed and less developed countries still further.



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