1 Introduction to the Consultative Committee Meeting for Biomethanation of Agro-industrial Residues for Energy Recovery and Nutrient Recycling

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A Consultative Committee Meeting for Biomethanation of Agro-industrial Residues for Energy Recovery and Nutrient Recycling, organized by UNIDO in co-operation with the Government of Belgium, was held at the ‘Château du Lac’ in Genval (Belgium) from the 17th to 21st November 1986. The meeting was directly related to the implementation of the Nairobi Plan of Action on New and Renewable Sources of Energy. It was directed at accelerating the industrial application of biomass energy technologies and waste recycling technologies with the ultimate aim of increasing and diversifying energy resources and of environmental pollution abatement.

Background and justifications

One one hand many Developing Countries have rich biomass resources although these are not fully or efficiently exploited. Among the new and renewable sources of energy, biomass is generally recognized as having one of the greatest potentials for exploitation in Developing Countries. On the other hand, the heavy dependence of many Developing Countries on agricultural production and on energy imports makes it imperative to introduce modern industrial technologies for the conversion of agro-industrial by-products and wastes into energy and other useful products in order to increase the added value of agricultural production. The agriculture-energy-industry link is obviously an important one for many Developing Countries, and it is, therefore, desirable that concerted international efforts are directed towards the implementation of industrial projects for energy production from agro-industrial by-products and wastes.

Moreover, Belgium is one of the world leaders in biomethanation technology and it was believed that the convening, in Belgium, of a Consultative Committee Meeting for Biomethanation would lead to the transfer of Belgian know-how and resources to interested Developing Countries in this important technical area. Investments in the field of biomethanation of agro-industrial residues for energy recovery and nutrient recycling, are more difficult to assess and promote than other kinds of investments. If
their socio-ecological benefits seem evident to many experts, their financial and economic benefits for the investor are often considered as marginal or even doubtful at first sight. Some of the reasons are:

(1) In the past, such investments were generally not considered as technically indispensable.
(2) If realized, their direct contribution to reducing the production costs appears marginal compared to the effect of other technically recommendable measures such as new or improved production equipment.
(3) Their financial returns can often be measured only in terms of benefits such as pollution abatement and resource recycling, and therefore assume real significance only if heavy penalties are imposed for non-compliance of anti-pollution laws.

Yet new trends in this field are being noticed. Many industrial managers, indeed, in both the Developed and the Developing Countries are more and more concerned by decreasing the energy dependence of their activities. Furthermore, in countries where the agro-industrial sector is rapidly developing, like in Brazil, one anticipates an increasing social pressure, on both the public and private policy-making and decision-making levels, to achieve effective environmental pollution abatement.

In accordance with the above statements and/or recommendations, the Belgian Government and UNIDO decided to convene the above Consultative Committee Meeting in November 1986.

**Purpose of the Meeting**

The purpose of the meeting may be defined as follows:

(1) To identify and facilitate investment projects for conversion of agro-industrial by-products and wastes into energy (methane) and other useful products, through biomethanation process.
(2) To identify opportunities for carrying out feasibility studies (covering socioeconomic cost/benefit analysis) on biomethanation projects.
(3) To identify opportunities for further development work involving process and design studies and leading to pilot or demonstration plants for biomethanation where the application of this technology to a particular type of agro-industrial residue appears promising.

It is important to note that the objective of the meeting was not to be regarded only as one of the usual UNIDO initiatives for investment promotion in general. The initiative of the Government of Belgium and UNIDO, indeed, did not aim so much at promoting investment in the sector of biomethanation in general but was more oriented towards the facilitation of their realization through the analysis of their structural impeding mechanisms and the elaboration of concrete and appropriate solutions.

**Selection of projects and participants**

The participants from the Developing Countries were selected on the basis of an investment proposal. In June 1986 UNIDO invited governments of selected