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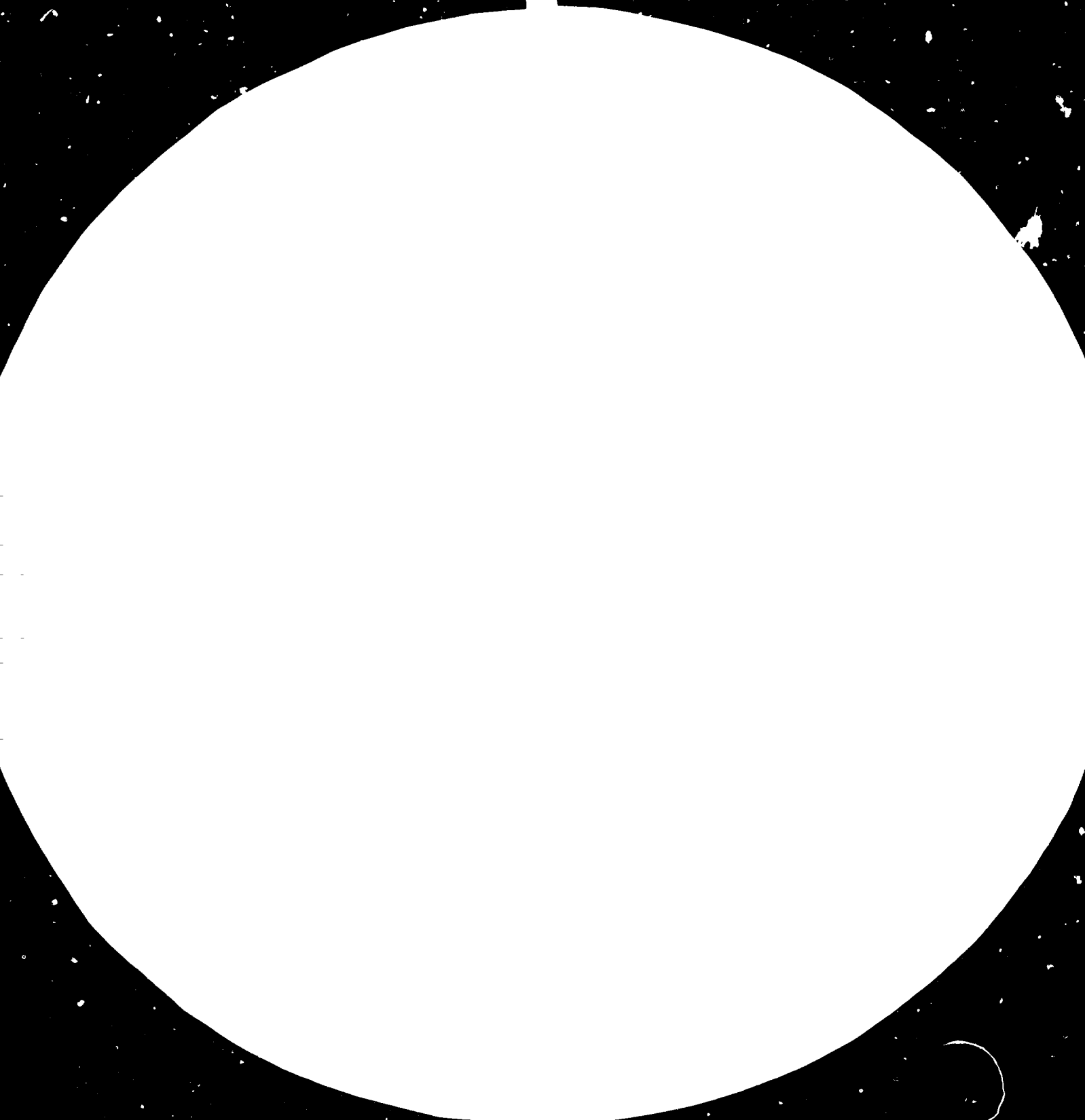
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Second Consultation on the
Pharmaceutical Industry

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THE DEVELOPMENT OF DRUGS
BASED ON MEDICINAL
PLANTS

Issue paper *

prepared by
the UNIDO secretariat

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1. Background

At the preparatory meetings to select issues for discussion at the First Consultation on the Pharmaceutical Industry, several participants stressed the important role that medicinal plants should play in developing countries, since these countries have suitable raw material resources which are either underutilized or neglected (progress report: ID/WG.393/5, para. 3).

The First Consultation recognized that essential and well defined products based on medicinal plants along with the 26 essential drugs identified by UNIDO, constitute an illustrative list for undertaking basic manufacture in developing countries (report of the First Consultation: ID/259 para. 4(a)).

A background paper has been prepared for presentation of this issue to the Second Consultation.

2. The Document

The development of drugs based on medicinal plants, background paper (ID/WG.393/11)

In the last century, medicinal plants have developed new applications as raw materials for bulk drugs and intermediates, besides to its customary use in traditional medicine. The interest in medicinal plants stem from their observed clinical benefits, hence the empiric performance of this natural pharmacopeia led to characterize new drugs by isolating their active principles.

The high cost of chemical drugs encouraged a number of developing countries to complement modern medicine with traditional medicine to spread health care coverage to the majority of the population at reasonable cost. In general, it is cheaper for developing countries to use plant extracts instead of pure active principles for the cost of isolating those principles is high.

Prescriptions in developed countries contain over 180 active plant principles, about 45% of them are used as pure principles, the rest is used as crude drugs or crude extracts. Customarily, developing countries export on crude extracts from medicinal plants which are thereafter processed in developed countries to obtain pure (or crude) drugs with a value added of about 10 times higher than the price of crude extracts.

Financial and infrastructural limitations did not enable developing countries to carry out elaborate chemical experiments to study the physiological basis for drug action and the development of process technologies thereof to extract the active plant principles. The fewer developing countries engaged in medicinal plant work concentrated more on validating the efficacy of herbal medicines than on isolating active plant principles. The technology to extract active plant principles is generally existing in developed countries while most plant raw material is obtained in developing countries.

Therefore, the production of active plant principles in developing countries require transfer of the relevant technology according to the degree of uniqueness of each plant specie, the assurance of a continuous supply of medicinal plants, and the identification of the local flora and fauna characterized to certain known active principles.

Since a number of medicinal plants grow in developing countries either wild or with relatively lower crop yields, there is a need to improve its crop and active principle yields to ensure the continuous supply in quantity and quality of the plant raw materials needed by the pharmaceutical industry.

3. The Issue

There is a need in developing countries to complement expensive chemical drugs with cheaper plant-based drugs and to increase

their supply of plant raw materials upgraded from crude extracts to pure active principles.

Participants at the Second Consultation are thus invited:

- a) to advise UNIDO on the preparation of a data base on medicinal plants used as therapeutic agents and the publication of a "directory of medicinal plants" indicating the possibilities of its valorization.
- b) to advise UNIDO on steps to be taken for transfer of technology to produce known bulk drugs extracted from medicinal plants in developing countries. Technology is deemed to be required in the following areas:
 - i) manufacturing process know-how and quality assessment of active plant principles;
 - ii) improvements in crop yield and genetic development to increase the yield of active principles.
- c) To advise UNIDO on the preparation of guidelines to negotiate long-term supply of plant raw materials from developing countries.

