TANZANIA SISAL BOARD

REPORT ON THE JOINT MEETINGS OF THE 35TH SESSION OF THE INTERGOVERNMENTAL GROUP ON HARD FIBRES, 37TH SESSION OF THE INTERGOVERNMENTAL GROUP ON JUTE, KENAF AND ALLIED FIBRES AND THE 16TH SESSION OF THE SUB-GROUP OF SISAL AND HENEQUENE PRODUCING COUNTRIES

1.0 INTRODUCTION

1.1 The Joint Meetings were held in Pasay City, Manila, Philippines from 20th to 22nd October 2009 at the Philippines International Convention Centre (PICC). Delegates from Tanzania were Mr. Salum Shamte, the Managing Director of Katani Limited and member of the International Steering Committee of The United Nations International Year of Natural Fibres 2009 and Mr. Hamisi S. Mapinda, the Acting Director General of Tanzania Sisal Board who represented the Government of the United Republic of Tanzania at that meeting.

1.2 The Intergovernmental Group on Hard Fibres (IGGHF)

The Intergovernmental Group on Hard Fires is a designated International Commodity Body (ICB) under the rules of the Common Fund for Commodities (CFC). In this role, the Group is responsible for sponsoring hard fibre projects for funding by the CFC and for supervising and reporting on the progress of projects under implementation. The Intergovernmental Group on Jute, Kenaf and Allied Fibres does not have a similar responsibility.

1.2.1 Functions of the IGGHF

The Group provides a forum for consultation on the studies of the economic aspects of production, marketing, local processing, trade, research and consumption of abaca, sisal, henequene, coir and other hard fibres, individually and as a group. The group carries consultations and promotional actions with respect to the above hard fibres including in particular the following functions:-

(i) The recommendations to individual countries of measures designed to bring greater stability to the world sisal, henequene, abaca and coir markets and viability to the sisal, henequene, abaca and coir industries.

(ii) The assembly and examination of information on current and prospective supplies, requirements, foreign trade and prices of sisal, henequene, abaca and coir and their manufactures in both exporting and importing countries on the basis of all available data on areas, including years of planting; production, exports, imports,

consumption, stocks and prices of those fibres and their manufacture.

(iii) In the light of the current and prospective situation regarding global demand and supply, the recommendation to the exporting countries of levels of exports which would bring global demand and supply more closely into balance within, an indicative price range acceptable to both importing and exporting countries.

(iv) The consideration where necessary, recommendation of all measures which would contribute to the greater effectiveness of work ensuring of stability to hard fibre markets and viability of hard fibre industries.

2.0 OBSERVATIONS

The Joint Meetings of the 35th Session of the Intergovernmental Group on Hard Fibres, the 37th Session of the Intergovernmental Group on Jute, Kenaf and Allied Fibres and the 16th Session of the Sub-Group of Sisal on Henequene Producing Countries held in Pasay City, Philippines was attended by delegates from the member countries as follows – Bangladesh, Brazil, Philippines, Sri Lanka, Sudan and the United Republic of Tanzania. The observers who attended were from the Asian and Pacific Coconut Community, the International Jute Study Group and the London Sisal Association. Other invited participants were those who had their interests in the Hard Fibres Group as experts and manufacturers of machines or products from Hard Fibres such as composites, pulp, etc.

From the Sessions of the meetings one can summarize or categorize the Sessions in the following main themes. These are, collaboration and not competition, production, research and development, markets and the supply chain, status of the International Year of Natural Fibres 2009 and finally the strategy for the way forward.

2.1 Collaboration and not Competition

It was observed that, competition amongst the hard fibre producers is being exploited by the synthetics thus eroding the markets and prices for the hard fibres. This is in result creating an unhealthy situation, which is detrimental to the economies of the developing countries given the fact that most of the hard fibres are produced from these countries. Hence instead of competition among the hard fibres producers there should be complementation and collaboration. Thus hard fibres should evolve a strategic alliance to counter the emerging challenges from the synthetic fibres so as to defend their existing markets and find new avenues for their products. The Group should join hands in formulating projects and working together, collaborate in Research and Development thus fostering an effective and enduring international partnership among the various natural fibre producing countries. It was also observed that Asia has its own Centres of Excellence, which are in China and India, thus there is a need for Africa to establish its own Centre of Excellence. With all the above observations in the consultation at the meeting as far as collaboration is concerned it

was concluded that the Hard Fibres Group should develop strategies and alliances so as to develop the fibre industry in a sustainable manner and move forward in harmony.

2.2 Production

2.2.1 Few agricultural commodities are as diverse as natural fibres. This diversity extends from genre, physiology to production and all the way to the utilization of the commodity. Natural fibres is an important agriculture sector currently worth around US$40 billion annually to the world's producers, the majority of whom are situated in developing countries. Cultivated traditionally as a cash crop the sector generates as much as US$20 billion in export revenues and there is room for more production and improvement in this sector and it plays a very significant role in the economies of the developing countries.

It is now obvious that the world is now accepting that climate change is a reality and we have to adopt to the adverse effects of climate change and the potential impacts. The challenges of climatic changes obviously will affect our production of natural fibres hence our farmers thus a need arises as a group to focus ahead to alleviate this projected situation. It is important for the industry and the scientists to start pioneering new solutions for the production of natural fibres and their products.

2.2.2 What Should be Done

The meeting discussed and emphasized on the following points as far as production of natural fibre and its products is concerned:-

(i) Means and ways should be found to improve productivity and fibre quality improvements. Also not forgetting reduction of production costs.

(ii) We are weather takers and not weather providers/givers, hence a need arises to institute programmes adaptable to climatic changes and we have to start preparing ourselves for this situation.

(iii) Efforts should be undertaken even to the extent of having genetically modified species which will have more productivity, resistant to diseases, more drought resistant and suitable for various end uses/products.

(iv) Increase production of natural fibres and reducing pre-harvest and post-harvest loss by requesting Governments to provide assistance to farmers for further expansion of their farmers and providing them also with funds for capacity building.

(v) Governments should institute suitable policies which will attract investments from developed countries in the natural fibre production and products.

(vi) The introduction of simple and affordable technology should be encouraged among the Group members as this technology is available in some member countries and should be shared among the members hence the importance of collaboration and not competition.

(vii) Efforts should be made to ensure that remunerative prices for natural fibres prevail.

2.3 Research and Development

2.3.1 Research and Development was one of the areas which was discussed in the Sessions of the IGGHF in Manila, Philippines. The importance of research and development is given by the fact that no development strategy can be achieved without research and development. Thus the way forward for the hard fibres lies also with research and development. The discussions centred mainly on two areas, that is utilization of research results already obtained and undertaking new research. The points discussed and emphasized in the Sessions were as follows:-

(i) To undertake research for the purpose of developing new genetically modified species which are disease resistant, varieties which can be suitable for various end uses, suitable for smooth cloth making, etc.

(ii) More research should be undertaken to provide a variety of products which has a wide local consumption.

(iii) Undertake new research for the utilization of the hard fibres while putting on emphasis on producing good quality products which are of benefit to the society.

(iv) Utilization of research results already available by starting or undertaking first pilot projects then moving into commercial capacity depending on the results of the pilot project after showing to be good and feasible.

(v) Continue to undertake research on more efficient technology for processing of products from hard fibres. Consideration should be put on the fact that such technology should be affordable by the third world countries which are the producers of these hard fibres.

(vi) Governments in respective countries should be interested to finance such research results, produce things which could create industries for such products. The end results is as follows: -

- Projects initiated and industries development after moving from pilot project to commercial capacity due to such research results create employment.
- The concept of value addition to the farmers produce comes into play hence improved rural economy.
- The end result of such undertaking brings about poverty alleviation.

(vii) There arises a need of strengthening the institutional capacities of the developing countries so that, they have their own capacity for undertaking research and development in their own countries.

(viii) It is important to maintain gene banks for the variety of hard fibre plants we have now so that they could form the basis for our research in producing new varieties as per our needs.

2.3.2 Composites and Geotextiles

Various papers were presented by experts in their fields who were under invitation as observes. The papers were on composites and Geotextiles as the new emerging products from the hard fibres.

2.3.2.1 What are composites and Geotextiles?

(i) Composites

Composites are hybrid materials made of polymer resin reinforced by fibres combining the mechanical and physical performance of the fibres and appearances, and bonding the physical properties composites combine a high stiffness and strength with low weight and their corrosion resistance is excellent.

(ii) Geotextiles

These are thin permeable materials both woven and non woven from hard fibres. They are primarily used in civil engineering works to improve the structural of soils and control erosion in slopes along railway lines; irrigation canals, rivers, water storage embankments stabilization of sand dunes and erosion of ski-slopes.

2.3.2.2 Properties and Advantages

(i) The general property for the composites and geotextiles is the fact that they are both good for the environment, i.e. they are biodegradable.

(ii) They are easily sustainable given the fact that the sources of their raw materials originates from hard fibre plants, hence the fibre plants can be easily grown and take a short time to mature and not like wood – fibre/pulp whereby trees take a long time to mature also the use of wood – fibre/pulp has a negative impact to the environment. This is due to the fact that it results into deforestation and forest degradation, which causes uncertainty in the rainfall and rainfall pattern. This situation is even more serious in the developing countries as most of these countries are dependant on rainfall for agriculture production.

(iii) Their products (composites) have good mechanical properties such as low specific weight, which results in a high specific strength and stiffness. This advantage is beneficial especially in parts designed for bending stiffness that is why hard fibre composites are now replacing fiberglass composites. They also have good crash components, i.e. they are not brittle.

(iv) They are renewable resources, the production requires little energy (hard fibre plants); Co_2 is used while oxygen is given back to the environment, hence reduction of Carbon dioxide emission.

(v) There is a friendly processing of composites as it requires no wearing of tools and skin irritation does not occur like the processing of fibreglass composites.

(vi) Hard fibre composites can easily be recycled while fibreglass composites causes problems in combustion furnaces if one decides to recycle.

(vii) They are good and available at low cost, as they are simple and cost effective in processing and their durability is assured.

2.3.2.3 Products

Composites have entered nearly all the industrial sectors. These include aerospace, marine craft, automobile industry, packaging,

sports industry and civil engineering. In the automotive materials include brake pads, car interior parts such as the instrument panel, door parts; other products include cases, sanding discs, insulation materials, construction materials for house building and partitioning. Composites are now replacing fiberglass hence all products, which were being produced using fiberglass, are now being made from hard fibre composites.

2.3.3 Projects on Hard Fibres

Presentation was made on the status of hard fibre projects as of 31st July 2009. These were projects which have been operationally completed since the last Joint Meeting in February 2007 while others are coming into completion. Two other new projects, which were formally submitted to the Group for consideration, were also presented and endorsed.

2.3.3.1 Completed Projects

(i) Cleaner Intergral Utilization of Sisal Waste for Biogas and Biofertilizers(CFC/FIGHF/13-MTF/URT/127/CFC)

The objective of this project was to establish the technical as well as economic viability of the production of gas and fertilizer from waste. Activities included the construction of a pilot demonstration facility to produce biogas which ,was to be used to produce electricity and the formulation of a national strategy for sound and pro-environmental utilization of sisal gas for energy production. In this project utilization of waste from biogas for the production of fertilizer is being evaluated. The project is located at Hale Sisal Estate, Korogwe in the United Republic of Tanzania. Implementation is widely considered to have been successful with the project and objectives met. It is only the formal reporting of the project's merit, which is yet to be completed.

(ii) Sisal Fibre Replacing Asbestos in Cement Composites (CFC/FIGHF/15-MTF/BRA/068/CFC)

The project sought to determine at a pilot level the technical and economic viability of the use of sisal fibre in production of construction materials as a potential replacement of asbestos in the building industry. Activities focused on the establishing the technical parameters of various mixes of sisal fibres and cement to meet the minimum performance criteria set by the regulatory authorities.

(iii) Pilot Facility of the Efficient Coir Processing and Quality Control (CFC/FIGHF/24-MTF/SRL/05/CFC)

The objective of the project was to undertake operational research and development for the improved fibre extraction techniques and for the development of standards to be used in quality control practices. A pilot facility was set up to demonstrate optimal processing practices that can be adopted by the small-scale fibre processing units. Improved production (increased quantities and higher quality) was matched in the working conditions and production environment, ultimately resulting in higher levels of profitability at the bottom-end of the coir production chain. Results appear promising.

(v) International Symposium on Natural Fibres(In Support of the International Year of Natural Fibres2009– CHC/FIGHF/28FT)

This fast track project financed an International Symposium on natural fibres that took place in Rome, at the FAO Headquarters on 20th October 2008). The symposium acted as a "lead-up" activity for the International Year of National Fibres 2009 by generating and sharing information on the economic, social and environmental significance of natural fibres. A key design of the symposium was to promote natural fibres as members of a family, all contributing to food security and poverty alleviation of farmers, all as environmentally sound commodities. The symposium also attempted to build alliances among proponents of various individual natural fibres and the furthering of plans for the IYNF. A major output of the project consisted of the symposium proceedings, which inter alia illustrated the significance of natural fibres and prospects for the future, including constraints to prosperity in the natural fibre industries and actions that might be needed to overcome those constraints.

(vi) Audio Visual Projects for the IYNF

This fast track project financed the production of a video that raises awareness of the IYNF goals. The short video explains the importance of natural fibres to the world economy and in particular to the people who depend on them for their survival. By presenting the case for natural fibres in a concise yet effective manner, the video contributed to public perception of natural fibres and installed in the public agenda the need for supporting the goals of the IYNF.

2.3.3.2 Projects in the Process of Implementation

(i) Preliminary Feasibility Evaluation for Utilization of Sisal Liquid Waste (Juice) for the Production of Pesticides and Veterinary Drugs

The objective of this fast track project is to respond to several research-based queries raised by CFC in their evaluation of fuller project "Utilization of Sisal Juice for the Production of Pesticides and Veterinary Drugs" and the way for its eventual approval.

The fuller project which was previously endorsed by the Group, aimed to promote the said products using the liquid waste of sisal. However before handing approval, the CFC requested an assessment of the technical, economic and commercial viability of sisal juice to control pests in agriculture and parasites in horses and cattle and its viability in replacing pesticides known to be dangerous to humans, plants, animals and the environment. The project is expected to significantly improve human and animal health in the poor regions of North-eastern Brazil as well as producing socio-economic benefits to the rural population.

The Natural Fibres Association of the State of Bahia (SINDIFIBRAS) and Secretariat of Science, Technology and Innovation of the State of Bahia (SECTI) both of Brazil will carry out the project.

2.3.3.3 New Projects Endorsed

The meeting endorsed two proposals which were formally submitted to the group for consideration. These projects are:

(i) Upgrading Sisal Biogas to Biomethane for Use as Fuel in Tractors and Other Vehicles

The project of "Cleaner Integral Utilization of Sisal Waste for Biogas and Fertilizers" has confirmed that biogas can be produced from sisal waste in large quantities and biogas can be used to produce electricity by burning it in combined heat and power (CHP) units. The pilot biogas plant for this project was established at Hale Sisal Estate, an estate owned by Katani Ltd. of the United Republic of Tanzania. The Tanzanian delegation submitted the project proposal for "Upgrading of Sisal Biogas to Biomethane for Use as Fuel in Tractors and other Vehicles".

Biomethane is biogas, which has been upgraded or sweetened via a process to remove the bulk of Carbon

dioxide, water vapour, hydrogen sulfide and other impurities hence increasing the methane content to above 95%. This can be compressed to liquid form and be used in gas engine vehicles hence replacing fossil fuels (diesel, petrol, natural gas). Biogas used for transportation has many times higher value than biogas used for electricity generation. From the functional point of view, biomethane is extremely similar to natural gas except that it comes from renewable resources. It can be injected to a natural gas network for distribution and consumption, be used to fuel vehicles adapted to using Compressed Natural Gas (CNG). Automotive application of biomethane has the potential to replace a substantial amount of fossil fuel and reduce greenhouse gas (GHG) emissions. A study on the use of biogas for running tractors and motor vehicles has become more important due to continued increase in prices of fossil fuels. Use of biogas to replace fossil fuel is more economical, sustainable and environmentally friendly. The Group at the meeting endorsed this project proposal.

(ii) Future Forum 2020 (A Supply Chain Collaboration of the Hard Fibres Group)

This fast track project proposal is intended to establish a "Future Forum 2020" for the hard fibres the main objective of the project is to implement a sustainable mechanism to strengthen the creation and sharing of knowledge, that will facilitate strategy development for all stakeholders in hard fibre sectors with particular emphasis in the producing developing countries. It aims also at increasing the competitiveness of the commodity, promote international cooperation; address the vulnerability of exports and to raise the profile of commodities.

2.4 Markets and the Supply Chain

It has been observed that in many developing countries, natural fibres are typically marketed through fragmented chains with little coordination and poor information flow; hence giving rise to high supply risks and high transaction costs. Also another observation is the fact that markets of the traditional products to the developed world is now shrinking. Some of the factors to this are the low birth rates of such countries thus population decrease, also companies are merging. However, with the developing countries the opposite is the case, i.e. birth rates are high hence population increase. These points are important as far as marketing strategy is concerned. The key points discussed as far as markets and supply chain is concerned were:-

2.4.1 Informal Price Arrangements for Sisal, Abaca and Jute

The "Sixteenth Session of the Sub-Group of Sisal and Henequene Producing Countries" assisted by information provided by the

Secretariat on the current price situation undertook a detailed discussion of price **incentives for sisal, henequene, jute and abaca**. **The Sub-Group** recommended that, the practice of setting indicative prices should continue, as this was a reference point for farmers, which in a way is an incentive. Also Governments use such indicative prices for policy-making decisions.

The Joint Meetings of the Group adopted the recommendations for sisal fibre and baler twine informal prices made by the Sixteenth Session of the Sub-Group of Sisal and Henequene, held on 20th October 2009 in Manila – Pasay City. **The undersigned Hamisi S.Mapinda was elected Chairman of the Sub-Group of Sisal and Henequene Producing Countries.**

The recommendations made by the Sub-Group and adopted by the Joint Meeting were as follows: -

(i) The indicative price range for Brazilian No. 3 fibre should be set a USD 700 to USD 800 per tonne, f.o.b. Salvador.
(ii) The indicative price range for East Africa UG fibre should remain at USD 800 to USD 1000 per tonne, f.o.b.
(iii) The indicative price range for sisal and henequene baler twine should be set at USD 24 to USD 26 per 18kg bale of regular runnage, f.o.b.
(iv) For jute and abaca fibres, the Joint Meeting made the following recommendations:-
- The indicative price for Bangladesh jute should be set at USD 630 per metric tonne sight for BWD grade fibre f.o.b. Chittagong/Chalna.
- The indicative price range of abaca, namely the average S2, G and JK hand cleaned non-Davao grades, should remain at USD 128 to USD 185 per bale of 125kg f.o.b. Manila Port.

2.4.2 Expand Markets and Improve Returns

The Joint Meeting discussed and made consultations within as far as the erosion of the market for traditional products is concerned, increasing the flow of market information, trade issues and developing new outlets for fibre, particularly through development of new products.

(i) Erosion of Markets for Traditional Products

The promotion of traditional products has not in practice been given a high priority by the Group. It is advisable that, the Group should take every opportunity to reduce or halt the decline in these markets. Given this situation it is imperative that the Group should seek to maximize the advantages provided by the environmental friendliness of these fibres, capitalize on any advantages that exist, and ensure that, it is adequately demonstrated to the consumers. Efforts should be taken

where necessary to improve the environmental attributes of hard fibres.

(ii) Outlets for Fibre and Development of New Products

In order to have outlets for fibre due to the shrinking markets of traditional products it is important to develop new products and promote the use of fibre in new applications. Such uses include paper, building boards, geotextiles, which are seen to be potential areas where natural fibres have an advantage. Composites are another emerging products with wider applications such as housing and household applications, marine, aerospace **nano**-technology, etc. Furthermore a need arises to seek and apply funding for further research and development and for market development. Also create a database for the collection and dissemination of data for fibres where data does exist on new developments or discoveries.

(iii) Trade Issues and Flow of Market Information

It was discussed and agreed that, the Secretariat should continue to improve its collection and dissemination of market and trade information and analysis. Also the Secretariat should continue to undertake analysis and provide information to the Group on the impact of development in trade policies, domestic subsidies and other support and evolution of international markets for fibre and fibre products.

2.5 Status of the International Year of Natural Fibres 2009

The Joint Meeting reviewed the progress in implementing and observing the International Year of Natural Fibres 2009. During implementation a committee was formed known as the International Steering Committee. The Committee with other stakeholders in overseeing implementation of the year established four objectives.

(i) To raise awareness and stimulate demand for natural fibres.
(ii) To promote the efficiency and sustainability of natural fibre industries.
(iii) To encourage appropriate response to the problems faced by natural fibre industries.
(iv) To foster an effective enduring international partnership among the various natural fibre industries.

Delegates presented short reports on the experience in implementing the International Year of Natural Fibres 2009. The Tanzanian case was what Tanzania managed to do in carrying out this task and this was as follows:-

- In Tanzania we managed to establish a National Steering Committee, which consisted only of members from the sisal industry. This was after we have failed to incorporate or get officials from the Ministry of Agriculture, Food Security and

Cooperatives also from Tanzania Cotton Board despite of various attempts.

- The National Steering Committee managed to stage only two major exhibitions of various products from sisal during the Saba Saba and Nane Nane fairs.
- The National Steering Committee managed to sponsor one person to attend one of the meetings of the International Steering Committee of the International Year of Natural Fibres 2009.

It was finally agreed by the Joint Meeting that the objectives of the International Year of Natural Fibres 2009 are long term and a closing event would neither be conducive to their ultimate realization nor be in the interest of their sustainability. In view of this, delegates and members were argued to continue on fostering these objectives.

2.6 Strategy for the Way Forward

In discussions and consultations the Joint Meeting reviewed the development strategy of the IGG on Hard Fibres. This strategies discussed and summarized in the above sections culminated in making recommended actions and agreed upon also summarized in above sections culminated in making recommended actions also summarized in above sections and agreed upon the following intergovernmental action plans. The Secretariat was charged with the responsibility for implementing the Action Plan under the guidance and assistance of nominated champions.

2.6.1 Policy

Activities to be included are comprehensive and complete listing of tariff and non-tariff barriers, as well as subsidies and domestic support. The Secretariat to compile the information to be published on the FAO Website.

Champion: Wilson Andrade – Brazil.

2.6.2 Research and Development

This to be on agronomic, processing and markets. The Secretariat tasked with the design, construction and implementation of a data base on the above mentioned dimensions for fibre and fibre products.

Champions: M/s. Prof. Alcides Lopes Leao (Brazil) and Dilip Tambryajah (Sri Lanka)

2.6.3 Analysis

Analysis to be undertaken on market outlook and projections of raw materials, foundation for model building, annual reports, data capability through FAO and other sources and the mechanism for dissemination and analysis.

Champions: Asia and Pacific Coconut community, the Jute Study Group, the London Sisal Association, Fibre Industry Development Authority and others.

2.6.4 Standards and Certification

The technical committee to identify, review and harmonize existing standards and facilitate where none exist. Certification/accreditation schemes and harmonize existing standards and facilitate where none exist.
Champions: M/s. Dilip Tambryajah, Prof. Alcides Lopez Leao and Peter Clasen (London Sisal Association – Hamburg).

2.6.5 Value Chain

Analysis of each fibre value chain and life cycle analysis in order to identify bottlenecks, inefficiencies and ineffectual coordination. To collect primary and secondary reliable information on the life cycle for each of the fibres to ensure that environmental goals are being maximized, especially waste utilization.
Champion: Mr. Salum Shamte (Tanzania)

2.6.6 Promotion

Explore the possibility of developing a logo for hard fibres, jute, kenaf and other similar fibres. Undertake generic promotion, production of promotion materials; prepare calendar of events, travel to local exhibition and events.
Champion: Ms. Cecilia Gloria J. Soriano (FIDA – Philippines).

2.6.7 Networking

Secretariat to liaise with the champion to promote the work of the Group via electronic means (E-group/blogs) to facilitate capacity building through the sharing of technical and market information and identify current and emerging priorities; also to advertise websites.

3.0 RECOMMENDATIONS

All the sessions in Manila, Pasay City, were very productive and the sisal industry has got a lot to learn and benefit from the Sessions. In these recommendations in addition to the contents of the report, we do hope that they shall be useful to both the Government, the growers and traders in the sisal industry. Below are the recommendations, which should be seriously digested and implemented by all concerned:

3.1 Collaboration

Concerted efforts should be undertaken to ensure that there is maximum collaboration for all concerned in order to ensure that the sisal industry becomes strategic and widely owned industry so that it can contribute substantially to the national economy. This can only take place in the following ways and areas:-

3.1.1 Sisal Growers

It is now high time that the mind set of the sisal growers should now change from being solely dependant on growing sisal to produce fibre. There are new products, which are more paying than fibre and sisal

growers should expand and increase their production and collaborate with others to produce these new products. Such products include composites, geotextiles, industrial alcohol, inulin, citric acid, renewable energy, i.e. bioelectricity, biomethane, bioethanol, etc.

3.1.2 Government Ministries and Departments

The nature and variety of new products from the sisal plant touches various ministries. If one is to look at the future of the sisal industry and if we are to reap maximum benefits from the plant as a hard fibre plant also by utilizing it effectively and efficiently. The involvement of the following ministries and departments is essential. The Ministry of Agriculture, Food Security and Cooperatives; Ministry of Industry, Trade and Marketing; Ministry of Planning and Economic Empowerment; Ministry of Energy and Minerals; Ministry of Environment and organizations such as the National Environmental Management Council (NEMC) and many others. These have key roles to play for each according to its objectives and functions. This can be in areas such as providing funds for capacity building to farmers and staff, research and development, pilot plants, demonstration farm, etc.

3.1.3 Academia

The academia is a vital link to collaborate with given the fact that most of the development seen today in various sectors all over the world has been made possible by the involvement of the academia both from universities and research institutes. These are to be made responsible for research and development activities as far as value added products such as composites, geotextiles, chemical products already discovered and perhaps more to be discovered in future.

3.1.4 Private Sector

The private sector is also important in development activities now and in future as far as the progress and future of the industry is concerned. This can be looked at mainly in three ways:-

- They are potential users of products which can be obtained from the sisal plant as value added products. New products range from chemical products such as citric acid, fructose, glucose, industrial alcohol, inulin, uses of bioenergy for their factories.

- They are potential producers as either private or joint venture partners in the production of various products of automotive products or spares, construction materials, furniture from sisal plant composites.

- They are also a potential sector in the feedback process and provision of vital information to the academia such as providing

specifications of the products they would need and what more should the academia and research institutes undertake research as far as the demand of the products is concerned.

3.2 Production

Much has been given in the report as far as crop management is concerned. What is being recommended here are the following issues:-

3.2.1 Capacity Building

The farmer has been marginalized as far as capacity building is concerned. This is particularly so in the sisal industry. There is a dire need for the Government to provide funds for capacity building for the farmers and other supporting activities such as extension officers who are paid by the Government. Given the fact that the Government have accepted the policy of smallholder farmers in the sisal industry, it is imminent that these farmers are provided with extension services by the Government.

3.2.2 Investment Policy

The Government should provide a conducive policy in investment and back industries which will be established for the production of new products from the sisal plant such as citric acid, fructose, industrial alcohol, glucose, inulin and automobile products, spares, construction materials, furniture from sisal composites.

3.2.3 Production for Local Consumption

It has been observed globally that the market is shrinking in the developing world due to low birth rates and companies are merging while the opposite is the case in the developing world. Given this situation our produce should be geared towards producing for local consumption. It is therefore appropriate to produce what you can consume and don't produce what you cannot consume. This can be reflected in what happened when there was the economic slow down with our production being heavily depended on the export market. Also it is a fact that Governments are the biggest buyers hence they should be in a forefront in buying of local products, implementing the policy of be proud buy national products. This policy has an impact as follows:

- It helps build the nation.
- Improves the farmers' income.
- Creates a ready market for the locally produced products.
- Creates employment from the established industries.

The benefit of the theme of consuming of what one is producing can be observed from what took place in China during the Global credit crunch. China did not suffer very much with the global economic slowdown; it remained strong and stable nation because of its policy of consuming most of what it is producing.

3.2.4 Climate Change

Climate change is a reality and one of the greatest challenges of our time. We are weather takers and not givers. According to statistics available now deforestation and forest degradation is taking place at a faster rate than aforestation. The activities, which are causing deforestation and forest degradation, are cutting of wood for firewood and for building purposes and rampant forest burning for hunting and farming purposes. Hard fibres in this case in Tanzania is sisal, should be taken as a strategic crop which is not easily affected by vagaries of weather, i.e. it is drought resistance. Another advantage is that it takes three years to mature but with proper crop husbandry it can take only two years. Hence it does not take a long time to mature like trees. It has also been seen that from the sisal plant we can obtain biogas, which can be converted to electricity, it is possible to make composites, which can be used for construction purposes. If concerted efforts are undertaken to develop this crop the impact of climate change will be lessened as it will enable people to use biogas for cooking instead of charcoal from fire wood, low cost houses will be built instead of cutting trees to build houses, hence reducing deforestation and forest degradation.

3.2.5 Coir Industry

Coir is obtained from coconuts. The coir industry is much advanced in Sri Lanka, Philippines, India and Cambodia. Currently the Tanzanian government is in a process of establishing a Mixed Crop Board. The Board to be established can learn a lot from the above countries in establishing the coir industry in Tanzania especially on the coastal areas where coconuts are in plenty. This could be an added income for the rural farmers in these areas.

3.3 Research and Development

There are four areas as far as research and development is concerned. These are the research results, which until now are in application, and these include production of composites, geotextiles, pulp and paper. What remains is to go into investment for commercial production.

The second area is utilization of research results already available by undertaking pilot projects and if proven feasible moving into commercial production. These include carbonization and briquetting of sisal waste, biogas for electricity, biomethane and bioethanol as a biofuels and clean fuels and renewable energy. Citric acid, industrial alcohol, inulin, hecogenin, etc. for the food and beverage industry as well as pharmaceutical and cosmetic industries.

The third area is continuing to undertake new research in areas of new varieties of sisal plants, research on appropriate farming systems, developing new technology for fibre extraction which is more efficient and cost effective, mechanization for

harvesting, thermo-mechanical pulping of the whole sisal plant and many more others.

The fourth area in this is on training and staff development. Capacity building is a very important area as far as research and development is concerned. Again the importance of collaboration comes into play, which involves all stakeholders which include the Government ministries previously mentioned, the research institutes and other Government departments, the academia, the private sector and the sisal growers/farmers.

3.4 Market and Supply

Information and statistics are very vital for any market strategy. It is unfortunate that the local market potential is not known, hence it is imperative that a market survey/study should be conducted to know the local market potential and the market potential in the neighbouring countries for hard fibre products specifically sisal. The Government should assist this financially in conducting such a study.

3.5 International Year of Natural Fibres

The International Steering Committee of the International Year of Natural Fires 2009 established four objectives, which have been mentioned in Section 2.5 of this report. Also it was agreed by the Joint Meeting in Manila that the objectives of the International Year of Natural Fibres 2009 are long term hence member countries should continue fostering them. In view of this situation the Government should continue providing assistance financial wise in achieving such objectives which include also advertising our products both in local, regional and international exhibitions. An International Natural Fibres Organization (INFO) has been formed to coordinate the development efforts mostly of the producer countries. Mr. Salum Shamte and the undersigned are in the start up Board of Directors of INFO.

4.0 CONCLUSION

The report has tried as much as possible to elaborate in detail of what transpired at the Joint Meetings. However, technical reports can be obtained through the FAO Website as we were are informed by the Secretariat. Nevertheless this report gives us sufficient information, which can enable us to create a strategy to achieve the vision of creating a vital sisal industry, which is widely owned, and an industry that will contribute substantially to the National Economy of the country by producing high value added products and increase the utilization of the sisal plant.

Hamisi S. Mapinda
Acting Director General

TANZANIA SISAL BOARD
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