

**INTERNATIONAL WORKSHOP ON APPLICATION OF SCIENCE &  
TECHNOLOGY FOR OCCUPATIONAL VILLAGES DEVELOPMENT  
HANOI, VIETNAM  
2-5 AUGUST 2010**

***PARTICIPATING COUNTRIES:*** 15 Developing Countries (Including 13 Member Countries, 1 Non-member Country and 1 S&T-Industry Network Member of the NAM S&T Centre

***NUMBER OF PARTICIPANTS:*** The Workshop was attended by 18 overseas participants from 15 countries and 21 scientific papers were presented in three Technical Sessions.

The majority of the population in the world in the developing countries lives in villages. However, the national economic and social policies are often urban centric and do not necessarily help in alleviating the problems of rural poverty. The rural household incomes are strongly dependent on the vagaries of agriculture, but these may be complemented by diversifying and creating additional on- and off-farm incomes. In this regard, rural micro-enterprises play a significant role and their development yields increased production and generation of employment in the villages.

Developing countries have a favourable culture and tradition for rural enterprise development, marketing and technical skill upgradation and formation of collective action groups among households and communities in the villages, which can motivate and empower village people to make their lives more secure and prosperous. But the rural enterprises largely follow traditional and primitive technologies and the application of modern technologies is yet to be practiced in villages for efficient and productive use of the material, financial and skill resources of rural people. It is therefore necessary to identify the relevant technologies which have the potential for increased employment opportunities for the rural people, and improve upon or adapt the same to local conditions, wherever required. Developing institutional mechanisms to encourage the growth of skill and knowledge-based jobs through the creation of strong linkages

between academia, industry and vocational training institutions is an ideal solution to the problems of unemployment and poverty among the villagers.

A number of developing countries have initiated programmes to build up and operate rural businesses and micro-enterprises with a group of households working together or in clusters. In this context, the concept of Occupational Community Villages (OCVs) in Vietnam is unique. The OCVs form the country's rural industry base, in which several households work together to produce a single product. This collective approach allows groups to develop some degree of economy of scale and greatly improves their sustainability and efficiency. However, despite the success of OCVs in a national setting, they are still not fully equipped to move into higher value markets and do not have enough resources and skills to evolve into small and medium scale enterprises. There are similar programmes in many other developing countries aimed at the promotion of cottage and village industries and micro-enterprises and application of S&T for rural industrialisation and income generation in villages.

In order to deliberate on this issue, the Centre for Science and Technology of the Non-Aligned and Other Developing Countries (NAM S&T Centre) organised an international workshop at Tayho Hotel, Hanoi, Vietnam on 'Application of Science & Technology for Occupational Villages Development' during 2–5 August 2010, jointly with the International Cooperation Department of the Ministry of Science & Technology (MOST), Government of Vietnam and the Centre for Regional Research and Development (CRD) of Vietnam.

The Inaugural Session commenced with the Welcome Remarks by Mr. Nguyễn Van Ban, Vice Director of CRD, that were followed by an Introduction to the Workshop by Prof. Arun P. Kulshreshtha, Director, NAM S&T Centre highlighting the background of the event, the role being played by the Centre in promoting South-South cooperation in various scientific areas and specifically in context with issues related to the application of science and technology for rural industrialisation, employment generation and income enhancement in villages in the developing countries. Dr. Nguyen Quan, Vice Minister of MOST gave the Inaugural Address followed by the Vote of Thanks by Mr. Tran Hau Ngoc, Deputy Director General of the Department of International Cooperation, MOST.

15 countries, namely, Cambodia, Ethiopia, India, Indonesia, Iran, Kenya, Myanmar, Nepal, Nigeria, Pakistan, Philippines, Sri Lanka, Tanzania, Uganda and Vietnam participated in the workshop. The 18 overseas participants were from Cambodia [Mr. Hoeung Kimsay, Official, Science and Technology Office, Department of Industrial Techniques, Ministry of Industry, Mines and Energy (MIME), Phnom Penh], Ethiopia [Mr. Yared Awgichew, Agriculture Technology Transfer Expert, Ministry of Science and Technology (MOST), Addis Ababa], India [Dr. Anil Kumar Singh, Scientist-G & Head, Technology and Business Development (TBD), Central Institute of Medicinal and Aromatic Plants (CIMAP), Council of Scientific & Industrial Research (CSIR), Lucknow; Mr. Ammanaghatta Rudrappa Shivakumar, Principal Investigator – RWH, Karnataka State Council for Science and Technology (KSCST), Bangalore; Dr. Brij Mohan Sharma, Secretary, Society of Pollution & Environmental Conservation Scientists (SPECS), Dehradun; and Prof. Vasala Madhava Rao, Head, Centre for Geoinformatic Applications in Rural Development (C-GARD) & Head I/C, CIT, National Institute of Rural Development, Hyderabad], Indonesia [Mr. Darmawan Listya Cahya, Researcher, Agency for the Assessment & Application of Technology (BPPT), Jakarta], Iran [Dr. Hojjatollah Hajihosseini Sefideh, Director, Research Institute for Development Studies, Iranian Research Organization for Science and Technology (IROST), Tehran], Kenya [Dr. Salome Muthoni Guchu, Assistant Director of Research, Ministry of Higher Education Science and Technology, Department of Research Management and Development, Nairobi], Myanmar [Dr. Aye Aye Khai, Associate Professor, Department of Biotechnology, Technological University, Kyauk Se], Nepal [Prof. Dilip Subba, Secretary, Nepal Academy of Science and Technology (NAST), Kathmandu], Nigeria [Mrs. Angela Chineme I. Nwanya, Chief Scientific Officer (Food Division), Raw Materials Research & Development Council, Abuja], Pakistan [Mr. Syed Nawazish Ali Shah, Deputy Scientific Adviser (International Liaison), Ministry of Science & Technology, Islamabad], Philippines [Dr. Ma. Josefina Pormento Abilay, Regional Director, Department of Science and Technology (DOST), MIMAROPA Region, Taguig City, Metro Manila], Sri Lanka [Ms. Jayasamara Gunaratne, Assistant Director, Vidatha Program, Ministry of Technology and Research, Colombo], Tanzania [Mr. Omar Jumanne Bakari, R/O Technology Diffusion & Commercialization, Commission of

Science and Technology (COSTECH), Dar Es Salaam], Uganda [Mr. William Balu-Tabaaro, Managing Director, Geo Engineering Technologies (GET), Entebbe] , and a representative from the NAM S&T Centre [Mr. M. Bandyopadhyay, Senior Expert]. In addition to these foreign delegates, there were several participants from the host country, Vietnam.

21 scientific papers were presented in three Technical Sessions, which were co-chaired respectively by Dr. Dilip Subba, Nepal and Mr. Vu Quoc Tuan, President, Vietnam Association of Crafts Villages; Dr. Anil Kumar Singh, India and Mr. Luu Duy Dan, Vice President, Occupational Association of Vietnam; and Dr. H. Hajihoseini, Iran and Mr. Vu Quoc Tuan, President, Vietnam Association of Crafts Villages.

The scientific presentations were on ‘Potentials and Situation of Occupational Villages in Vietnam’ by Mr Luu Duy Dấn [Vice Chairman and General Secretary, Occupational Association of Vietnam]; ‘Policy and Practical Measures to Promote Occupational Villages in Ethiopia’ by Mr. Yared Awgichew of MOST, Ethiopia; ‘Science & Technology for Rural Industrialization and Employment Generation In India’ by M. Bandyopadhyay of the NAM S&T Centre; ‘Spreading the Green Aura of Medicinal and Aromatic Plants for Improving Rural Economy’ by Dr. A. K. Singh of CIMAP, CSIR, India; ‘Status of Occupational Villages Development in Cambodia’ by Mr. Hoeung Kimsay of MIME, Cambodia; ‘Rainwater Harvesting (RWH) Project to Generate Sustainable Solutions for Drinking Water and Create Local Employment in Karnataka – India’ by Mr. A. R. Shivakumar of KSCST, India; ‘Enhancing Natural Resource Management and Sustainable Development through Water Resources Management: Focus on Agricultural Productivity and Appropriate Technologies’ by Mr. W. Balu-Tabaaro of GET, Uganda; ‘Current Status on R&D for the Development of Rural Community in Myanmar’ by Dr. Aye Aye Khai of the Kyauk Se Technological University of Myanmar; ‘Application of Science and Technology in Occupational Villages’ by Mr. Trần Trọng Thành [Vice-Chairman, Management Board, Asia and Europe Trade Promotion and Investment JSC – ASEM, Vietnam]; ‘Initiation on Industry Cluster of Micro-Small-Medium Automotive Component Industries in Regency of Bekasi and Locate to Jababeka Industrial Estate’ by Mr. Darmawan L. Cahya of BPPT, Indonesia; ‘Energy Efficient Lights – A New Era for Rural Employment’ by Dr. B. M.

Sharma of SPECS, India; ‘Benefits and Experience Gained through the Vidatha Program being Implemented by the Government of Sri Lanka to Uplift the Economic Levels of the Public by Transferring Science & Technology to the Village Level’ by Ms. Jayasamara Gunaratne of the Ministry of Technology and Research of Sri Lanka; ‘How should Nepal use Science and Technology for Its Rural Development?’ by Dr. Dilip Subba of NAST, Nepal; ‘Application of Science and Technology in Occupational Villages Development in Nigeria: The RMRDC Approach’ by Mrs. Angela C.I. Nwanya of RMRDC, Nigeria; ‘S&T Interventions toward Rural Industrialisation in Mimaropa Region’ by Dr. Ma. Josefina P. Abilay of the DOST, MIMAROPA Region, Philippines; ‘A Review on the Role of Science and Technology on Rural and SMEs Enterprises in Iran’ by Dr. H. Hajihoseini of IROST, Iran; ‘Technology and Rural Development In Tanzania’ by Mr. Omar J. Bakari of COSTECH, Tanzania; ‘Design and Development of Village GIS for 101 Villages in Bhilwara District, Rajasthan State’ by Mr. Madhava Rao of NIRD, Hyderabad, India; ‘Digital Villages Project: A Recent Strategy Towards Socio-Economic Empowerment of Rural Communities in Kenya’ by Dr. Salome M. Guchu of the Department of Research Management and Development, Ministry of Higher Education Science and Technology of Kenya; ‘Rural Uplift through Science and Technology’ by Mr. S. Nawazish Ali Shah of the Ministry of Science & Technology, Pakistan; and ‘Role of NAM S&T Centre on South-South Cooperation through Science & Technology’ by Prof. Arun P. Kulshreshtha, Director, NAM S&T Centre.

The Concluding Session was chaired by Prof. Arun P. Kulshreshtha, Director, NAM S&T Centre and Mr. Nguyen Van Ban, Vice Director, CRD, Vietnam, in which the participants shared their ideas on how they and their concerned agencies intend to proceed with the follow up on the issues raised during the workshop and proceed with bilateral collaboration to support each other’s ongoing programmes and initiate new activities.

During the Concluding Session a set of recommendations for submission to the governments and concerned agencies on matters concerning the occupational village development was also worked out and deliberated upon, after which a document titled ‘Hanoi Recommendations on Application of Science & Technology for Occupational

Villages Development, Rural Industrialization and Employment Generation’ was unanimously adopted.

The Valedictory Address in the Concluding Session was given by Dr. Nguyễn Quân, Vice Minister of MOST followed by the distribution of the Participation Certificates and the Concluding Remarks by Mr. Nguyễn Văn Ban, Vice Director of CRD.

En route to Ha Long Bay in the Gulf of Tonkin situated in the north-eastern part of Vietnam, ~170 Km from Hanoi, the participants visited two Occupational Community Villages (OCVs), respectively related to manufacturing of Silk and Ceramic products and interacted with the people working there. Ha Long Bay is one of the world’s natural wonders and is among UNESCO World Heritage sites. The participants were taken by boat to the caves, which have peculiar stone formations.

The participants thanked and greatly applauded the efforts made by the NAM S&T Centre and the International Cooperation Department of the Ministry of Science & Technology, Government of Vietnam and the Centre for Regional Research and Development of Vietnam in organising such a wonderful and useful workshop. The contributions made by Ms Ngo Thi Loan, Vice Head of Project Department in CRD, Vietnam and Ms. Trieu Thi Bao Hoa of the Department of International Relations in MOST of Vietnam for the success of the programme were particularly recognised.

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## **HANOI RECOMMENDATIONS**

### **ON**

#### **APPLICATION OF SCIENCE & TECHNOLOGY FOR OCCUPATIONAL VILLAGES DEVELOPMENT, RURAL INDUSTRIALISATION AND EMPLOYMENT GENERATION**

**WE, THE SCIENTISTS, TECHNOLOGISTS, PROFESSIONALS, AND POLICY MAKERS FROM** Cambodia, Ethiopia, India, Indonesia, Iran, Kenya, Myanmar, Nepal, Nigeria, Pakistan, Philippines, Sri Lanka, Tanzania, Uganda and Vietnam;  
**PARTICIPATING IN** the International Workshop on ‘Application of Science & Technology for Occupational Villages Development’ jointly organised by the Centre for Science and Technology of the Non-Aligned and Other Developing

Countries (NAM S&T Centre), International Cooperation Department (ICD) of the Ministry of Science & Technology, Government of the Socialist Republic of Vietnam, and the Centre for Regional Research and Development (CRD) of Vietnam during 2-5 August 2010;

**CONVEYING GRATITUDE** to the Government of the Socialist Republic of Vietnam for its generous support for this programme,

**HAVING EXTENSIVELY DELIBERATED ON** various issues related to the application of science and technology for occupational villages development, rural industrialisation, employment generation and income enhancement in villages in the developing countries;

**UNANIMOUSLY EXPRESS** that the International Workshop has been a resounding success and has provided an opportunity to the participants from various countries to discuss their country specific schemes and programmes, problems and constraints, and also exchange ideas and expertise on the subject;

**NOTING THAT**

- A number of developing countries have initiated programmes to build up and operate rural businesses and micro-enterprises with a group of households working together or in clusters; and
- Though Occupational Community Villages (OCVs) in Vietnam have attained considerable success, in some other countries, such entities have not yet fully equipped to move into higher value markets and do not have enough resources and skills to evolve into small and medium scale enterprises;

**UNANIMOUSLY RECOMMEND** that the following actions may be taken up by the concerned authorities in the participating countries:

- The countries may formulate their plans for the strengthening of the existing occupational villages and similar structures as well as in the creation of new entities to promote the development and transfer of technologies for application in villages and adoption by the concerned users and industries aimed at employment generation and income enhancement in villages;
- For the progress and sustenance of occupational villages and rural industry, priority should be given to concentrate on formation and expansion of less capital-intensive projects involving maximization of the existing indigenous technological capabilities;
- New and appropriate technologies should be introduced to make the products and processes compatible and sustainable in the market;
- Emphasis should be laid on the upgradation and adoption of existing technology rather than investing on high-tech and sophisticated areas;
- The initial approach should be on building up the techno-economic infrastructure and development of ancillaries for large industrial houses;

- An important policy issue should be on evolving a technology based product mix;
- Empowering rural people including women in production of medicinal and aromatic plant based products by setting up of micro-enterprises should be encouraged;
- A comprehensive resource inventory for each country should be developed by utilizing the expertise of the local S&T institutions and such information should be used for converting the resources into commercially viable projects by application of S&T;
- An inventory of appropriate technologies developed at the national level which could be transferred to rural areas should be prepared;
- In order to find solutions to the problems being experienced by occupational villages, like traditional handloom, jute processing and handicrafts, introduction of efficient looms and use of modern hand tools or semi mechanised tools should be supported;
- Modernisation of agriculture and agro-business establishments to add value to the products should be supported;
- Dedicated low cost computerized integrated design and sample making systems for handlooms and handicrafts should be evolved to improve production and competitiveness of goods manufactured by these sectors;
- There should be proper coordination and appropriate linkage between the village entrepreneurs and the S&T institutions for dissemination of proven technologies for application in rural areas, and also to utilize the expertise and facilities of the S&T institutions;
- Academic institutions, actors in the technological innovation systems and other national research laboratories should be involved and encouraged with incentives for supporting the process of technology diffusion, creation of new technology-based enterprises and employment generation in villages;
- Suitable training programmes for entrepreneurs and workmen need to be designed and implemented for various fields with appropriate transfer mechanisms;
- Countries should streamline their laws and regulations to facilitate all aspects of occupational villages' development and similar activities, thereby bringing their regulations into compliance with S&T friendly policies, and eliminating contradictions between such policies and actual regulations governing the availability of credit, customs, standards, taxation, etc.;
- Micro-credit institutions should be strengthened and established to assist rural people in technology transfer, and procedures related to providing financial assistance for the transfer of technology should be simplified;

- An environment should be created to access capital quickly and implement the projects along with access to technology from other parts of the world;
- There is a need to establish a proper information system to exchange and learn from each other regarding S&T management models to share the successful experiences among developing countries;
- Governments should fund R&D organisations for improvement, modernisation and refurbishment of infrastructure which will enable them to help occupational villages and similar enterprises;
- Professionals from the developing countries having programmes on OCVs should meet at regular intervals and share their experiences (success or failure stories) and formulate strategies for all round success.

**THUS DECLARED AND ADOPTED IN HANOI, VIETNAM ON THIS DAY, 3<sup>rd</sup> AUGUST 2010.**