

Bamboo: need for a new research agenda

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Editor's note: This article presents Dr. Mathew's view on research on bamboo and rattan. In view of the importance of the subject, I invited Dr. Ian Hunter, Mr. T. P. Subramony and Prof. A. G. Rao to give their comments. J. J.

The formation of the International Network for Bamboo and Rattan (INBAR) in 1997 marks a significant initiative for development of bamboo and rattan in the world. Though the signatories represent only 26 countries, the international umbrella significantly implies global attention to a totally neglected area.

INBAR's mission, as officially stated, 'is to improve the well-being of producers and users of bamboo and rattan, within the context of a strategic bamboo and rattan base, by consolidating, co-ordinating and supporting strategic and adaptive research and development'. A reinterpretation of the above mission statement is likely to be highly useful and illuminating, and hence can be highly rewarding in the activities of this international fraternity in the years to come.

INBAR's mission seeks to improve the well-being of producers and users of bamboo and rattan. This to the economist, does not adequately explain the trade-off in the process. The welfare of the producers and users of bamboo may often be conflicting rather than complementary. Therefore, one needs to further look into the explanatory variables which operate at both levels. The production-to-consumption system (PCS) model is more explanatory [1]. But such model also does not fully explain the situation.

Another thrust of INBAR's mission is on *sustainability* of the base. The term 'sustainability' has often been misunderstood. The economist and the discipline of management science explain it simply in terms of discounted cash flows (DCF) and net present value (NPV). However, the sociologist's perception is quite different. To the sociologist and to the political economist, sustainability needs also to be analysed in terms of the changes that it adds to the social system, i.e. the changes in social institutions, forms of organisation, etc.

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INBAR's mission also focuses on strategic and adaptive research and development. Commodity research at the international level is significantly facing a serious contradiction. This contradiction relates to the objective of research as such. Commodities can be viewed in two important ways: (1) as an important link in the world production system; and (2) as a means of livelihood for people (rich and poor). It is the former thrust that guided most of the commodity support agencies during the last half a century. This is true of commodity boards in the developing and industrialised countries alike.

Globalisation has necessitated a further look into this original approach. In many of the developing countries, the adverse effects of globalisation are more significantly felt among the poorest than among the middle classes and the rich. This reality indicates that, 'sustainable livelihoods' programmes should increasingly focus on an integrated approach, which covers both the above aspects. Unfortunately, this integration has not been felt in most of the commodities. Most of the commodity development organisations, having a hegemony of physical and biological sciences, have considered productivity and profitability as the hallmark of development of these commodities. Social scientists who work with most of these organisations have trained their initiatives to suit this hegemony. It is high time that we move beyond this limited approach to development and think of alternatives in the light of the emerging realities of today.

CLUSTERS AND COLLECTIVE EFFICIENCY: A VIRGIN AREA OF INQUIRY

International experience indicates that, in order to gain significantly in competitiveness, small firms and craftsmen should form strong relations with other firms (both small and large). They also gain from linkages with service institutions in 'clusters' of enterprises based on groups of related products. The enterprises together are better able than firms considered individually, to grow rapidly, upgrade their skills, improve their productivity and technology, develop product niches and gain access to distant markets. This provides one such new source of assistance capable of providing answers for a very large section of the SME sector.

Strategies for small enterprise development have been of two types: (1) individual strategies, and (2) collective strategies. Individual strategies are those initiatives that have been taken primarily by the private entrepreneurs; the Government, on the other hand plays a catalytic or supportive role. In collective strategies, the initiative is taken privately, but on a collective basis. Cooperatives and self-help groups are the best example of such initiatives.

In both the above strategies, government performs a crucial role of providing infrastructure, inputs at cheaper rates, etc. This lead role of government has both advantages and disadvantages. The major advantage is that it helps to create an overall environment for private entrepreneurs to act. The disadvantage is that, because of a significant level of government support, private entrepreneurs become lethargic and increasingly dependent.

The emerging environment throughout the world is such that governments cannot and do not perform the supportive role to the extent they played in the past. Therefore, new actors should emerge to fill up this vacuum. In this alternative situation, the lead role has to be performed by the entrepreneurs and their own self-help arrangements. The entrepreneurs themselves have to look back to their 'natural advantages' and have to introspect on their potential. Development of small enterprise clusters on scientific lines has been suggested as one of the major strategy options in the recent past.

THE INDIAN SITUATION

The debates on New Industrial Organisation (NIO) have led to looking at collective initiatives of entrepreneurs in new ways. Unlike the traditional conceptualisation of co-operatives, there has been an awakened interest in collective initiatives of new forms. Thanks to the initiatives of the UNIDO and UNDP, a few studies have taken place the world over on clusters of enterprises/activities. These studies have shown that several clusters have potential for kick-starting development in the rural areas. Bamboo is apparently such a cluster having substantial potential. Unfortunately, no study has taken place on bamboo and rattan (B and R) from this angle. It is necessary that the structural and functional linkages of this industry/activity has to be analysed in the context of the emerging competitive environment as well as developments in the area of technology and design.

The B and R sector of developing countries in the Asia-Pacific region need a fresh look on the above lines. Such an enquiry is likely to give greater strength, support and forcefulness for the rich work being undertaken by INBAR and other similar agencies.

An inquiry on the above lines should focus itself on the following fundamental questions:

- (1) Does B and R offer a *sustainable* source of livelihood to a sizeable number of people?
- (2) Does the existing bamboo development policies fit in with the emerging paradigm of NIO?
- (3) Do potential forms of organisation in a bamboo community offer an emulatable development model?
- (4) Can the environmentalist approach to bamboo development be made more economically sensible?
- (5) Can we have a replicable model and strategy based on bamboo clusters?

Fortunately, bamboo and rattan, a hitherto neglected commodity, came into academic and policy attention in the recent past. But during the last two decades, issues related to this commodity were viewed largely through the 'bamboo and rattan' spectacles. More recently, INBAR has played a crucial role in changing this conventional thinking, by focusing more on village commodities and action research.

Focus on village commodities and action research *per se* will not lead to meaningful development policies and improvement in the levels of living of the poor communities. This is especially true in the present era of globalisation. What is required is a research agenda that integrates an understanding of the micro realities against the policy environment prevailing in the sub-sector.

Policy studies, in most developing countries, are not considered a priority by governments. This is because such studies often lead to questioning of the foundations of current policies. However, one has to admit that it is an understanding of these foundations that lead to alternative policies, which help to improve the living conditions of the poor in the B and R sub-sector. The imperative of today is to sharpen the elements of a new research agenda for the B and R sector, which focuses on innovative forms of industrial organisation, their potential relating to provision of sustainable livelihoods to the poor people and, above all, the policy environment which shapes all of them.

REFERENCES

1. P. M. Mathew, The bamboo economy of Kerala, India: an analysis of the production-to-consumption systems. INBAR working paper no. 12 (1998) ISBN 81-86247-30-0.

The first comment is by Dr. Ian Hunter, Head of the mission and director general of INBAR

I welcome Dr. Mathew's paper. Bamboo, particularly, is positioning itself to be a significant wood substitute in the medium term. In recent years it has appeared in new ways in paper, panelling, floors, mouldings and furniture. It is changing, therefore, from being just an enthusiast's material to a significant commodity. However, it isn't there yet and so far INBAR, although recognised as the ICB (International Commodity Body) for bamboo and rattan, has not fallen into the trap of seeing bamboo just as a commodity.

It is very perceptive of Dr. Mathew to see and understand from India the changes that have taken place in the last couple of years in INBAR's manner of working. The review of INBAR, which took place in 1999, challenged INBAR to 'harvest the hope' by demonstrating that the many past research studies could actually be brought to bear to improve people's livelihoods. I responded to that by starting a series of major field-based projects, with encouragement and funding from IFAD (International Fund for Agricultural Development) and GTZ (German aid agency). So far we have four — NE India; Ecuador; Ghana and Hainan Island, China. In the near future we expect to have three further projects — in East Africa (IFAD funding); in Bangladesh (CFC funding) and The Philippines (possible ADB

funding). We have other smaller projects in China and The Philippines. With the current size of INBAR it will be hard to manage any more competently.

At the same time, INBAR has not entirely abandoned longer-term strategic research aimed at developing entirely new uses for bamboo and rattan. I would point to the recent examples of our project to improve the safety of bamboo scaffolding; our design and demonstration of pack-flat furniture and our exciting new food sources from bamboo shoots.

Already we are learning from our field-based activities and this learning is feeding-back into our ways of working. Each site contains a strong emphasis on identifying market potential before encouraging activity. Each one contains a component of resource management. Most have strong local NGO links. All contain a mix of training and action-research. Many of the simpler technologies researched in the past by INBAR and its colleagues are applicable with modification — harvesting; splitting; weaving; mat-making; preservation. Nearly all our current projects have a strong private sector link with the private sector often assisting with training. Hands-on technology transfer (training) is proving to be extremely important.

Thus although I agree with Dr. Mathew that this focus on village level activity is not a *sufficient* condition for the development of meaningful development policies and improvement in living standards, I would argue strongly that this portfolio of activity provides the *necessary* experiential basis for such development.

I think that sufficient work has already been done in China by Shashi Kant and Brian Belcher to demonstrate that, under a certain set of conditions, bamboo-based development produces great increases in income, but it would indeed by most useful, as Dr. Mathew argues, to generalise from our experimental base to see if a replicable model can be developed. I am currently, although with very limited success, trying to interest potential founders in just this issue.

The second comment is by Mr. T. P. Subramony, head of INBAR's office for South Asia in New Delhi

Speaking of policy initiatives for the bamboo sector, developing of appropriate policies for support and growth of the sector can be one of the most effective means of fulfilling the potential of the sector to fuel economic and industrial development, increase employment, and in the longer term positively affect poverty levels. However, to be truly effective, policy development requires the inputs of a wide range of people representing a variety of stakeholders, full discussion of the issues raised, and finally a consensual agreement on the best course of action.

INBAR and UNIDO (together with IFAD, and the North Eastern Council) recently (22–23 January 2002) held a regional policy workshop on bamboo and cane to discuss and address the policy constraints and opportunities for the development of the sector-based economy in the north-eastern states of India. The workshop brought together the central/state governments, international organizations, private sector, and NGOs to discuss various aspects related to the much needed bamboo

policy. This workshop was a part of a process that started with secondary and primary research and discussions, followed by the holding of State policy workshops on bamboo and cane in each of the NE States. The principal objectives were to examine the existing mechanisms, and to create and elaborate new mechanisms and structures for achieving greater integration of government policies. This was also part of the process of assisting the government in developing policy guidelines and regulatory framework for a bamboo and cane sustainable economic development model.

Based on the above, a comprehensive report with suggestions and recommendations is under formulation (in July 2002).

In consultation with national agencies/organizations and international agencies, INBAR also plans to organize a national-level workshop in India soon.

The third and last comment is by Professor A. G. Rao, Industrial Design Centre, Bombay, India, and member of our editorial board

The issues raised by Dr. Mathew are significant.

INBAR has done laudable work in creating an international forum for bamboo and rattan. A new orientation for INBAR activities will be worthwhile in the post modern context with 'global changes' taking place currently. Instead of getting into a debate on the issues raised, I shall point out 'needs' felt at the ground level with some action plans, which could be taken care of with a possible reorientation of INBAR activities. Bamboo craft is a bread earner for thousands of craft persons in developing countries. Most of them are getting marginalized in the 'global economy', opting out of their trade seeking less skilled industrial employment. Current efforts of bringing in 'mass producing machinery' into remote areas like in North Eastern India is often counter-productive to the very cause of creating better life for local craft person. Based on this statement, I developed the following needs and actions.

Need:

New product strategies that can integrate the abilities of craft persons with the 'mass-produced semi-finished raw material'.

Administrative and business strategies for the 'semi-finished raw material' like 'finished bamboo strips' to reach craft persons in the remote areas at fair prices.

Development of 'appropriate technologies' enabling the craft persons to increase productivity with low investments.

Development of craft based design strategies with post-modern idiom to be competitive in the global markets.

Action:

INBAR could influence national and international agencies for increased flow of funding for Design and Technology in the above direction.

Limited public awareness on the positive qualities of Bamboo and Rattan is a hindrance in facing competition from other materials like plastics.

Need:

Promotion through global mass media.

Action:

INBAR could initiate awareness involving public figures on the lines of W.W.F.

Professionals in design, engineering and architecture are unaware of the possibilities in bamboo.

Need:

Linking designers through organizations like ICSID (International Council of Societies of Industrial Designers).

Action:

INBAR could initiate series of 'Inter Designs' through ICSID where international designers can work in bamboo and rattan.

Current information on bamboo is full of terms familiar to scientists. Users of this information, like crafts persons, NGO representatives, government officials, designers, engineers, architects are unable to utilize the knowledge on bamboo due to the 'language gap'.

Need:

User-friendly presentation of properties of bamboo. Linking local names to botanical names.

Action:

INBAR could initiate production of user-friendly manuals on bamboo for different sections of people. INBAR has a bank of information on bamboo and rattan, which can be reproduced inexpensively in developing countries and distributed.

In addition to these felt needs, many new possibilities exist with new technologies. Internet based communication makes it possible to link remote rural areas with the

urban centres across the world. Virtual workshops across the glob are possible with the I.T. available today. INBAR could take a lead in promoting such distant education in bamboo and rattan.

Closing remark: I really do hope Dr. Mathew's view and the three comments will raise an interesting discussion. The topic is very important for all of us! Evidently everybody is free to contact Dr. Mathew (his address is at the head of the paper) but in view of some coordination, I would suggest readers send their comments to me at my email address (inside front cover) for publication in a next issue. Your editor, Jules Janssen.