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On Sherpas and Coolies: The G20 and Non-Brahmanical Futures

Yoginder K. Alagh

Senior Fellow, CIGI and
Former Minister of Power, Science and Technology
And Planning of India

Introduction

Sherpas help summiteers in carrying essential baggage, but also in sorting out strategic paths in the final phases based on their inherited fund of local knowledge. To use an expression of Smith and Carin, they are an important part of "shaping" the final assault. But the final "paths" emerge block by block from the activities of "coolies", in base and higher camps. They are, as they were, the "hewers of wood and drawers of water". There are no Brahmanical ways of changing the World, either in mythical Malgudi[1] or in real Boston (or still more to the North). If the goal is as ambitious as a smoother transition to a globalizing World, the threats to the process have to be anticipated in each phase and strategic solutions configured (shaped) and provided for. There is then no escaping the link between the local and the global. Summiteers, sherpas and coolies are all important and have to work in tandem. At the highest level the political process has to shape the future, the sherpas are important to feed them and in turn to inform the others of the shape

[1] The celebrated Indian novelist R.K. Narayan created a mythical village called Malgudi inhabited by very real people including very real Brahmins

of things to come, but the coolies are also important, for they have to discover and anticipate the "building blocks", which shape the problematique in a practical sense and to again engineer the future. The three levels, the political, the sherpas and the carpenters are each important. The solutions have to come from decomposing the present in terms of the requirements of the future, otherwise globalization remains a tautological self contained definitional slogan.

Getting away from allegories, it is argued that the outcome at Cancun could have been anticipated and avoided. Therefore at any moment of time we need early warning systems of threats to the shape being given to the change process and strategies to avoid them. This will involve networks of local knowledge-based think tanks, networked with official machineries. Much the same requirements emerge from the other two long haul problems listed for the February meeting by Smith and Carin, namely a new financial architecture for a World Currency and practical steps for sustainable development in term of energy-nonrenewable binds.

Cancun

Agricultural Trade had not increased after Marrakesh as was anticipated earlier and yet through the decade of the nineties, through the agricultural trade cycle many developing countries had kept up agricultural net trade deficits of a magnitude similar to the levels before the WTO. This gave comfort to many commentators as the gains from deeper reform were anticipated. The problem was not the volume of trade. Agricultural prices rose sharply in the first half of the nineties and then changed adversely. In the nineties also, agricultural models had shown that gains from trade would vary depending on the nature of policy changes, for example unilateral reform led to low gains. Yet the problem

was not the volume of trade, which, while varying, did not fall. The problem lay in another direction. Diversification of agriculture was the engine of widespread growth and poverty removal and it was threatened severely in the nineties. The problem was not that this happened, but it was not seen or known as a problem. For as Smith and Carin say:

> "Only leaders can mandate the crafting of domestic policy packages to compensate the losers in the agricultural sector. Only leaders can mobilize the international financial resources to compensate those disadvantaged by agricultural trade liberalization in developing countries."

But leaders need early warning systems of problems.

Together with Peter Petri, a student of Leontief I had worked on the first large model of global agriculture at FAO called Agriculture Towards 2000, we worked out that for 90 countries a 4% growth for agriculture meant roughly a 2% rate for grains, 5% for commercial crops and around 7% for non-crop agriculture. This pattern of growth created the incomes for people to eat and beat malnutrition. The FAO kept on revising that work and the nineties version showed again that the diversification of the agricultural demand basket became a significant feature of the growing economies from the mid-eighties onwards. FAO projected that up to 2010, GDP growth would be 7% annual in East Asia and 4.4% in the Near East and North Africa, with the West Asian (Near East) component growing faster. Per capita income growth was 5.7% annual for East Asia. With this kind of income growth there was a shift of demand to non-cereal food items and commercial crops. Countries projected to have high volumes and growth of agricultural imports were Japan, Hong Kong, the Republic of Korea, Saudi Arabia, Singapore, Malaysia, Indonesia, the Islamic Republic of Iran, Thailand, Kuwait and Oman. These countries were estimated to be large and growing markets for fruit and vegetables, meat and, in countries

like Japan and Korea, of fish. In fact up to the mid-nineties, the agricultural import of many countries in East and West Asia was growing between 4 to 8% annual.

All this changed in the mid-nineties as the East Asian slowdown led to a slowdown in the diversification of the agrarian economies of the NIE's. IFPRI models have conclusively demonstrated that, without trade and infrastructure reform for diversification, the poverty and food security agenda would definitely get a setback. A simple indicator of diversification, namely the change in the index of livestock production in a country divided by the index of agricultural production, shows this. According to the World Development Indicators, the long term annual GDP growth rate through 1997 was 6.9%, 7.0%, 7.3%, 8.1% for Indonesia, Malaysia, Thailand and the Republic of Korea, respectively. In the period 1984 to 1994, the incremental livestock to agricultural production ratio was 2.12, 2.18, 2.59 and 2.56 respectively for these countries. This emerged from the Engels Law. The GDP growth of these countries went down to 4.7%, 2.9%, 0.3% and 4.4% and the incremental livestock to agricultural production ratio went down to minus 1.79, 1.01, minus 1.61 and minus 0.72 in these countries from 1994 to 1999. Again, detailed data on vegetable and fruit production is available only for the nineties, but the incremental vegetable to cereal production ratio is minus 1.14 in Indonesia, minus 2.58 in Malaysia, minus 0.3 in Thailand and 1.43 in South Korea from 1994 to 1999.

This meant that a trend towards diversifying growth was being reversed. When I was reporting these trends in my World Food Day Lecture at FAO Bangkok on 16 October 2002, chicken and poultry farmers from upcountry Thailand were protesting – sometimes violently.

Since grain export is highly subsidized in the OECD countries there are further constraints on diversification as some Asian countries are also grain exporters and also subsidize exports and no one can stop them. From the mid-nineties in many countries grain exports have gone up. In India, cotton farmers – 7% of the agricultural labour force – were holding the political process to ransom, as they lost out to rice. These are fairly serious matters and highlight the importance of macro policies to avoid the Dutch disease if trade reforming poverty removing agendas are to be given priority.

The issue is not grain, but access. You need money to buy food, even if your farmers produce it and your shops have it. You need agricultural growth, not to grow grain, but to create a source of income on a widespread basis. When a large number of people live in rural areas, only widespread agricultural growth can trigger broad-based rural growth and this is the only guaranty of reducing hunger. It was this process which got in jeopardy in the second half of the nineties and which led to a lot of the tension in the global negotiations.

Conventional trade theory can give us somewhat ambiguous guidance, for trade can lead to specialization and the purist may want Asian countries to be net grain exporters. But given their agro-climatic diversity, countries like Indonesia, Brazil, India and others could perhaps have diversified their production baskets in a more efficient trade regime. I call them "Worlds within the World". The point we are making is that women and men of goodwill can find solutions to such problems, given time and the opportunity to do so. To repeat, the point is not that the problem was not solved or that it existed, but that it was not known and became an obstacle.

Financial Architecture

Smith and Carin have proposed that we should look at the possibilities of a single world currency as a long term possibility. The idea is so audacious that it might work. There is no question that global production will require major shake outs. But to get them going, in some sense the local, the national and the global will need a level playing field in terms of the rules of the game. The power of the credit card and the derivative will need to be available in the desert and the hill slope.

The questions of support and organization for global and local production are largely common. The differences lie in the nature of policy support. The global aspect of adjustment is far more important in participation in global markets. The questions of building and supporting peasant and artisan based groups in production, finance, marketing, technology and infrastructure support is necessary for both markets, although the degree of support required would vary in specific cases. Not much can be said on an a priori plane here. The approach is to actualize inherent competitive advantages in areas where markets are fragile. The difference in support bases arises in the approach to reform in the two cases. The global aspect needs much greater care on the international aspects and the local in the transitional paths and harmonization of domestic policies.

In a national exercise for strengthening globalization trends we had listed that there had to be identification of agricultural and artisan based strengths which need to be strengthened to compete in local, regional, national and global markets and that such areas of strengths required support of development of market based infrastructure which was generally lacking. Again, in fragile agro-ecological regions and artisan based industrialization and services, replication of demonstrated potential needed sharply focused and limited forms of community action. The organizational rules for such newer forms of organizations were not in place, since considerable ingenuity was needed to

fashion them as compared to private or government institutions in place already. Cooperatives, producer associations, self-help groups, local bodies and NGOs were increasingly entering into strategic alliances with each other, and corporates and governments and such alliances need to be provided for in the policy, legal, and administrative space. Financing and credit mechanisms for these newer initiatives were needed including community collateral, lending through weather and project cycles and other innovative forms of financing. It was argued that economic reform had to be deep-routed; otherwise policies of structured subsidies and support to those who help themselves were not possible.

These kinds of reforms which relate globalization with the large manpower and production systems of poor countries have obviously to be seen in tandem with currency system reform. The architecture for a World Currency will therefore need to be worked out carefully in order to make it acceptable, to put it rather mildly. At the global level such policies have been designed, but are not yet at the cutting edge. For example, one of the more serious preparatory meetings for the World Summit on Sustainable Development at Johannesburg was the Expert Thematic Round Table on Promoting Sustainable Development in A Globalizing World, in February 2002. This Expert group squarely addressed the issues we have been pleading for as listed above. The Former Swedish Prime Minister Ulsten, the present author and the Former Environment Minister of New Zealand were the monitors for the different sections of the discussion. Amongst others, "[t]he following proposals for action emerged from the discussion of the Round Table are important, because with minor changes they have been incorporated in the Johannesburg Declaration:

- Improve investment processes in developing countries and countries with economies in transition to facilitate access to credit lines as well as to preferential terms of financing and of providing funds for collateral support systems and sharing of investment risk. In this context, provide securities for local institutions involved in infrastructure development and specific knowledge based activities to support sustainable economic growth, through, for example, creation of collaterals, interest differentials and trading of financial papers. These processes should be targeted, amongst others, to artisan and producer groups linked with local and global markets, local government agencies providing social and economic infrastructure, and farming and rural communities.
- Improve coordination among international financial institutions and redirect funds to sustainable development projects.
- Develop new or strengthen existing mechanisms such as the Clean Development Mechanism (CDM), to finance or re-finance community projects in rural areas aimed at land and water development, agricultural diversification and agro-processing, development of infrastructure, trade, and rural energy supply.
- Use debt-swap mechanisms to finance sustainable development projects including projects for environmental conservation.
- Create fairer trading systems through, for example, initiating consumer-producer partnerships for the production and consumption of goods and services that have positive social and environmental impacts and developing production and product standards for improving the competitiveness of those goods and services.

- Strengthen international support to developing countries for efforts of sustainable agricultural practices, while the global agricultural markets are being reformed.
- Study for the purpose of replication, existing models for providing access of rural communities to ICTs in order to enhance the level of information in rural communities on productions, crops, markets, prices and technologies as well as in support of medical services and education".[2]

From the Delhi Expert meeting these kinds of arguments entered the Monterrey discussions and then the Johannesberg Declaration, although action was thin.

But the interesting point is that some of these concerns find expression in the preparation for Cancun. For example, in the Stuart Harbinson draft they find expression for the first time in the WTO negotiations.

The opportunities in the Harbinson Draft (quoted selectively) are as follows:

Attachment 9; Article 6.2 of the Agreement on Agriculture; Possible amendments for further consideration (changes in italics)

In accordance with the Mid-Term Review Agreement that government measures of assistance, whether direct or indirect, to encourage agricultural and rural development, are an integral part of the development programmes of developing countries, and in accordance with paragraph 13 of the Doha Ministerial Declaration the following measures in developing country members shall be exempt from domestic support reduction commitments to the extent that these commitments would otherwise be applicable to such measures:

(iv) subsidies for concessional loans through established credit institutions or for the establishment of regional and community credit cooperatives

[2] For this text, see WSSD Secretariat at www.johannesburgsummit.org.

(ix) capacity building measures with the objective of enhancing the competitiveness and marketing of low-income and resource-poor producers

(x) government assistance for the establishment and operation of agricultural cooperatives

(xi) government assistance for risk management of agricultural producers and savings instruments to reduce year-to-year variations in farm incomes

Domestic support meeting the criteria of this paragraph shall not be required to be included in a Member's calculation of its Current Total AMS".

It may be noted that the Harbinson Draft came down heavily on governmental subsidies in any form, but it supported for discussion the strengthening of a global financial architecture for decentralized local development. If we can begin the long road to creating financial markets and making them a part of the global reform process, we can start to seriously think about currency unification. I am arguing that in a very rudimentary sense the "primitives" (the common words and categories which precede discussion) for such an exercise are perhaps already getting in position.

Growth and Climate Change

In a very thoughtful sentence Smith and Carin say:

> The U.S. needs to be brought back in the tent, something that will not happen by trying to push American acceptance of the Kyoto framework. The developing world must be included, above all China and India. For that to happen there must be incentives in terms of growth potential for those countries. There are ways to make this happen.

I would like to argue that this is not just a question of incentives, but rather some empathy with development styles and languages. For example:

- In consultation with the Office of Strategic Management of the Secretary General of the United Nations, the United Nations University had initiated studies on A Sustainable Development Framework in Large Developing Countries in China, India and Indonesia.[3] Large countries matter in this context on account of their size, their impact and the possibilities of strategic choices. Some studies which lay the framework are reported in the Annex.
- The illustrative quantitative magnitudes of such studies show the sharp breaks in many indicators and unmanageable problematics emerging in major concern areas. Solid waste disposal levels of more than 100 million tonnes, slum populations of around 100 million persons, acute water shortages and air and noise pollution of a severe kind, all manifest themselves. The serious environmental implications of burning poor quality coal are apparent underlining the critical energy situation in the country. The UN Country case studies on large countries also bring out the severity of constraints being faced and the need to make a beginning to "favourable" paths immediately. China and India are two examples. Growth in large countries underlines the quantum jumps being faced. Indian studies make the point that if severe water shortages are to be avoided, the improvements in irrigation efficiency and cropping intensity will have to be much faster than historical rates. If bad coal of over a billion tonnes is not to be burnt for power needs, alternative energy management styles will have to be implemented

[3] For a strategic view of the problems of the new millennium, See H. Van Ginkel and R. Thakur, *Embracing the Millennium: Perspectives and Challenges for the United Nations and the International Community*, (Tokyo: UNU Millennium Series, 2002). For a large country perspective in this volume, see Yoginder K. Alagh, "Development and Governance", pp. 73-84.

and hydro and nuclear options considered, in addition to a major focus on renewables.

- If BOD disposal is to be kept in reasonable limits from slums, a strategy of decentralised urbanisation will have to be followed. Modern technology will have to be integrated with artisan and rural populations so that the benefits of national and global markets can percolate to the work force.[4] Trade and globalisation will have to grapple with these questions. Regional arrangements may well be a part of the answer. If these kinds of links cannot be established in concrete terms, the concept of an enduring future will remain an empty box.
- Sustainable policies are not just questions of global negotiations, but rather they have to grapple with issues of energy requirements, land use, food demand changes and agriculture and technology for meeting industrial and service requirements.[5] If communities are out of balance with their resource endowments, there can be no question of significant advance in the areas of global concern like carbon sequestration or biodiversity. Recent French-Swiss models, summarized in the Annex, clearly bring out the need for strategic policy initiatives in the energy sector.

It will be belabouring the obvious to a Canadian audience to say that there are possibilities to bring large countries together in a framework of discussion on such questions.

Unfortunately the world has not learnt to negotiate on these terms and the knowledge base listed remains untouched. The language of the other remains an enigma and that is

[4] Alagh, UNU/IAS, 2000.
[5] See Pitcher, 2000 and Yangi, 2000.

the issue when large countries come to grips with these questions. In August 1982, I was a member of the first Indian delegation to China after almost a decade and a half. Vice Chairman Deng Xiao Ping met us in the Hall of People. In ninety minutes he described the path that China took for two decades. Large countries have options and these have to be placed within the design of a global framework.

Design Questions

The design of the three-level structure remains a question that needs more work.[6] A network of coolie organizations to backstop the questions we are grappling with seems necessary. In these kinds of areas, like early warning systems, the financial architecture and large countries and energy, water and emission questions, we need some detailed study of the manner in which principle stake holders, in this case members of a strengthened G20, could pursue specific interests creatively in the larger contexts being conjured. These studies would create the knowledge systems with which the structure of a flexible, technology linked, lean in design, network to back the official sherpas, could be designed. The network would be autonomous (maybe in CIGI), but strongly linked with the sherpas.

Some initial free thinking on the possible outlines of work on designing such structures may be in order. Somewhat tentatively as far as the borders for designing such structures are concerned we propose that research may consist of:

- An understanding that as the State withdraws from direct delivery governance there will be a need to establish a regulatory framework for the functioning of the economic and social sectors; and also to lay down the institutional framework, the

[6] In this connection, see for example, Prof. Slaughter's paper.

incentive and disincentive mechanisms and fiscal structures for civil society institutions to function like decentralized, local institutions of Government, Cooperatives, NGOs and newer "mixed" forms of similar organizations.

- Non-renewable resource scarcities will be far more severe, particularly for resources such as water, quality land, and energy and sustainability in which concerns will be especially acute.
- There will be a much greater emphasis on the rights of individuals and groups, including participatory forms of decision-making. This in turn will demand greater fairness and self-restraint in the use of Government Power. Related to it will be demands on transparency and the right to information.
- There will be the demand for protecting vulnerable groups, either the historically underprivileged, or the victims of marketization. There will also be concerns for human rights, particularly of specific groups such as women, children, the minorities from other nations, and the mentally and physically challenged.
- On the flip side, modern technology will be seen as providing cutting-edge knowledge-based solutions to emerging scarcities or problems, and therefore encourage a greater use of information technology, biotechnology, systems networking, and the new materials and strategic management responses; at the global level, organizational systems will need to synchronize with these possibilities.
- Thoughtful groups will see security concerns becoming more acute, arising from socio-economic political dichotomies and resultant tensions as also the more basic issues of energy security, food and water security and institutional dimensions of addressing these.

As thoughtful groups think ahead on these kinds of problems, the link between the local and the global would become obvious. This would then raise in concrete terms the architecture questions of the link between national and global institutions and the restructuring of the G20 as an operational exercise.

Amplifying some of these, the withdrawal of the direct economic role of the state has to be accompanied by a conscious policy of decentralization, setting up of regulating bodies for the infrastructure and industrial sectors and constitutional recognition or of government agencies of the emergence of NGOs, producer groups and cooperatives in fields of land and water, rural and urban social activities and social infrastructure. These have obvious implications of national-global institutional connections.

Who will Guard the Guards? This is an important question on which little a priori discussion is possible.

The issues in decentralization are of another kind. It should remain a matter of priority for State Policy to help those who help themselves in the core areas of local and global concern. As preparations for Kyoto and later developments showed in relation to targets, performance has been well behind in the interrelated areas of energy and sustainable use of land and water. What are the civil management and organizational issues here at the local, national and global level in the case of a problem which is at the heart of food security and employment and energy sufficiency?[7]

Problems partly arise because the existing legal and administrative systems and financial rules are structured for formal organizations in the public or private corporate sector. So are global financial institutions. Newer kinds of institutions with strategic mixtures of organizational styles, coops and corporates, NGOs and governments, NGOs and coops do

[7] See Y.K. Alagh, 2002.

not have a level playing field for them. Recently a Bill has been passed in the Indian Parliament allowing cooperatives to register as companies, based on the report of the High Level Committee on Legislation for Corporatization of Cooperatives.[8] Such innovative approaches are rare and in any case become controversial. There are reform issues here also. For example, a loss making subsidized electricity system can underprice a renewable group and drive it out of the market. The long-term problem is reform in the sense that subsidies and protection given to established groups have to be withdrawn. In the short run the protection given to each group must be the same.

The structure or incentive and disincentive systems for this kind of growth should begin with a taxonomy of complementarities of policy rules at different levels of policy making so that no level can spend more resources than they have access to. But resources which are short or binding constraints at national or global levels are elastic at local levels. However, their mobilization requires policy changes at higher levels. For example, it is easy to buy a tax-free bond of the New York civic bodies, but very little attention has been paid to markets for local bodies' bond paper in developing countries and the fiscal reform that has to precede them. There is no attempt to integrate these issues with global financial reform architecture, although as we saw, the problematique has been posed at Monterrey and before Cancun. Exceptional efforts by some local bodies and aid agencies are there (For example, there is a cooperative effort between USAID and Ahmedabad Municipal Corporation to float a large bond issue without sovereign guaranties) and these could be used as case studies).

The last three problems essentially underscore that the reform process has to be fairly deep-rooted for widespread land and water based poverty reducing growth

[8] The Companies Second amendment Bill, 2002.

processes to take place. The kind of growth discussed meshes well with higher output, income, employment and trade levels. Improved management of water leads to crop diversification. The typical sequence is a poor yielding mono inferior cereal economy, succeeded by a high yield cereal and a commercial crop, or tree crop. In the Indian case, exchange rate reform led to higher growth of agricultural exports before the East Asian crisis cut down demand in the fastest expanding markets and recent evidence is that in the upswing, countries sourcing non-traditional exports have gone through a phase of land and water development sequences. But such policy complementarities have to be planned for.

The issue here is the requirement of systems to be alert to field oriented developments. Such systems have to constantly assess organizational, legal and financial system requirements. It can be said that this was always so. The pressing change now is that the requirements are to involve civil society in the process. This makes the networking and knowledge requirements more intense. Abilities of communication and having the energy to follow more complex goals will also be required in this phase.

As seen earlier, it is interesting that in recent global meetings these issues are already getting attention. But the discussion and negotiations are sporadic and the preparation for them primitive. Also there is considerable stop-go. The Stuart Harbinson draft discussed earlier, emerging from a year of negotiations after Doha, could not be discussed with the last minute chaos at Cancun, but is again coming to the fore. It is obvious that newer structures and strategies have to be operationalized in these areas with a sense of urgency.

The public management issues involved in rapid and decentralized growth are so obvious that they do not need elaboration. Awareness of technology, system

interrelations, decentralized planning foci, self-reliant institutions which can productively borrow and build and run systems have all been discussed and yet only a small beginning has been made. These are going to be the great challenges of the next phase. The ability to raise and use resources productively will be at the heart of the matter. As local communities integrate with national and global markets, institutions and policies at global levels will become increasingly important. Large developing countries are now asking for level playing fields and are pro-trade, as the Cancun and outsourcing debates show. The issue is to capture growth spaces in the global regimes. The governance structures will be playing a role of strategic planner and facilitator of change. These will be the need for an operating vision of the future in the sense of instruments and methods of achieving goals, and these will be in the legislative, community and private sector regimes. The system must play a role in facilitating innovation, creating rules for organizations to implement such change and sort out the inevitable problems that will arise. These are complex issues with a strong interface with good governance.

Serious research during the last decade and a half has shown fairly conclusively that the tremendous opportunities that are available with the new technology require groups and systems that can manage its interdisciplinary nature, since applications cut across areas such as biotechnology, communications and computerization. If the preconditions are available, it spreads very fast, both through space and sectors in economy and society. But if the infrastructure is not there – organizational, physical and human – vast areas will be left out including some in the developed World. There is also the need of quick response. As Ricardo Petrella of the EEC's FAST Group pointed out, each generation of innovations is building on the corpses of earlier ones. Established State and parastatal agencies find it difficult to perform in this framework. Major think

tanks working on the character of the Neo-Fordist (assembly line) technological revolution, the flexible industrial specialization networks and others have emphasized that it is compatible. India had convened for UNESCO a Prepcom meeting at Bangalore for the World Science Conference and the Bangalore Declaration which strongly reiterated that spread of technology was an institutional and not just a technology issue. These were small flexible groups responding to work that needed to be done. Again, the need for partnerships, of community initiatives to back those who work, and the links with higher level machineries at national and global levels, is obvious.

Another dimension which conditions the functioning of civil society in modern times is the profusion of laws, national and international, relating to economy, ecology, technology and international treaty obligations. The change in the concept of property from something tangible to forms which are intellectual and intangible brought almost a revolution in the laws of trade and commerce. Intellectual property law and trade related intellectual property rights have become critical in economic governance globally. Added to this is the revolution in information and communication technology which threw up a new legal framework for doing business within and outside government. Globalization is happening not only in relation to the market but in respect of all conceivable aspects of organized life to the fast changing legal climate in all these matters influencing both policy development and administration. Similarly, another legal dimension impinging public governance at all levels is the jurisprudence of sustainable development. There are today legal parameters in the use of administration that have to be accommodated within sustainable limits. These are some of the significant legal perspectives that are critical for civil society in the future.

As argued in the October 2003 meeting at Waterloo, a possible method of pursuing these design goals is to commission a set of studies at the national level under a coordinated global arrangement to sketch in greater detail the requirements that emerge as nations move ahead along the lines indicated above.

Conclusion

The purpose of this discussion has been to draw out of the attributes that will be required from the design of the system in the forthcoming period. These would include amongst others:

a) a sense of vision and direction in which the global socio-polity is moving, including its very diverse cultural plurality;

b) the ability to strengthen civil society groups as the State withdraws from direct economic activity and constitutional recognition or of government agencies of the emergence of NGOs, producer groups and cooperatives in fields of land and water, rural and urban social activities and social infrastructure. These have obvious implications of national-global institutional connections.

c) to enmesh these requirements with the structure of reform processes in terms of organizational rules and financial incentive and disincentive systems in emerging global architectures; also to build up systemic abilities to anticipate problems and react in a timely manner;

d) an ability to appreciate some of the real scarcities that are emerging, as well as the strengths of civil society to cope with them; recognition that resources, which are short or binding constraints at national or global levels, are elastic at local levels. However, their mobilization requires policy changes and support at higher levels;

e) an ability to interface with modern technology, which provides the cutting edge to many solutions, particularly at the operating levels with flexible and fast changing organizations; recognition that the spread of technology is an institutional and not just a technology issue. There needs to be small flexible groups responding to needed work. There needs to be a greater acceptance of the need for partnerships, of community initiatives to back those who work, and strengthening of the links with higher level machineries at national and global levels.

f) at higher levels of the system, including in legal systems, an ability to network with local government institutions, non-governmental organizations, cooperatives and other professional and people's organizations; recognition of global attention to the profusion of laws, national and international relating to economy, ecology, technology and international treaty obligations, which are undergoing rapid change.

g) a sense of fair play, honesty, political and systemic support;

h) compassion for the underprivileged and, above all, a commitment to the creation of a fair and functional emerging global order as being envisioned by the political support to this study.

Annex

A UN study was released at Johannesburg under the title *Towards A New Strategic Framework for large Developing Countries: China, India and Indonesia*, (Tokyo: UNU, 2002). Some of the preliminary findings of the Indian study have been reported earlier by Kirit Parikh and Y.K. Alagh. See K. Parikh et al., *A Framework for Sustainable Development of India: An Overview*, also Y.K. Alagh, "Global Sustainable Future and Developing Countries", in Fu chenLo, H. Tokuda and N.S. Cooray, *The Sustainable Future of the Global System*, (Tokyo: UNU-OECD, 2000), ch.17, 19. Also see Y.K. Alagh, *Sustainable Development India, 2020,* (UNU, IAS), reported in UNU above.

India Projections for the Year 2020

- POPULATION 1330 million
- URBAN POPULATION Low : 465 million; High : 590 million
- SLUM POPULATION Low : 85 million; High : 130 million
- SOLID WASTE DISPOSAL 100 to 110 million tonnes
- DEMAND FOR COAL Low : 817 million tonnes; High : 2016 million
- POWER GENERATION tonnes
- CROPPING INTENSITY More than 1.5
- NET AREA SOWN Constant at 141 million hectares since the nineties
- IRRIGATION INTENSITY Around 1.75
- WATER SHORTAGE Around 10% to 25% between the years 2020/50
- NOISE LEVELS Twice the norms in trend forecast
- AIR POLLUTION Two to two and a half times the norms in trend forecast

Source: Y.K. Alagh, *Sustainable Development India: 2020*, (Tokyo: UNU, 2001), as quoted in Y.K. Alagh, "Global Sustainable Future and Developing Countries", in Fu chen Lo et.al., ed., op.cit.

French-Swiss and Other Energy Models

S.No.	Fuel Source	1996	2020		2050	
			Actual	Bu	Eff	Bu Eff
0	1	2	3	4	5	6
	% share of :					
	1. Coal	30	38	35	33	32
	2. Oil& Natural Gas	24	50	50	62	61
	3. Renewables	46	12	16	5	7
	[In (3) fuelwood falls,solar,wind,hydel,nuclear increases]					
	4. %growth over 1996 of					
	Primary Energy	327	263	853	683	

Source: O. Scwank, T. vonStokar and N. North, "Long Term Carbon Emission Targets", in P. Audinet, et al., (eds.), *Essays On Sustainable Development*, (Delhi: Manohar, 2000), p.135. Also see Foreword by Yoginder K. Alagh

Note: Bu is Business as Usual, Eff is Energy Efficiency

Other models include

- Kenji Yamaji, "Modeling Global Energy Systems to Address Climate Change", in Fu chenLo, H. Tokuda and N.S. Cooray, *The Sustainable Future of the Global System*, (Tokyo, UNU-OECD, 2000).
- Also in the same volume, Shunsuke Mori, Maria, "8 Simulations Under SERES and post SERES Scnarios".
- T. Morita, "Global Modeling and Future Scenario for Climate Stabilization".
- H. Pitcher and T. Morita, "SERES and POST-SERES Scenarios".
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