

Twelve Contributions to Sustainable Development

Prefatory words by Dr. Ashok Khosla....

My work in the field of sustainable development goes back a long way – all the way, in fact, to 1964 when I helped Professor Roger Revelle at Harvard University to design and teach the undergraduate course in General Education, Natural Sciences 118 – “Population, Resources and the Environment”.

In 2002, when she was preparing her nomination of me for the United Nations Sasakawa Environment Prize Jury, Barbara Pyle, then Vice President of CNN and of Turner Broadcasting, summarised the four decades of my work into 12 “Contributions”, which she (somewhat generously) considered to be as mentioned below.

Contribution 1

Played a major role in creating better understanding of some of the deficiencies in the existing patterns of development and of the need to introduce more holistic environmental and societal goals into economic policies.

How

Having acquired the tools for analysis of people-resource-environment interaction (developed during his work with Professor Roger Revelle at Harvard University and elsewhere), Dr. Khosla was able to use the vast empirical information base available to him in his assignment as head of India’s new environment agency. The insights he gained were invaluable for evolving an Indian and developing country viewpoint for the environment. While the issues that drove environmental concern in the North – air and water pollution, acid rain, waste management, wildlife conservation – would also become important in poor countries, he and others from the South urged the international community to look at soil erosion, deforestation, the drying up of local hydrological systems and, more generally, management of natural resources as equally important environmental issues. He also wished to bring to the international agenda some of the root causes of these problems, including international commerce, the terms of trade and other imbalances in the global economy that led to the creation of many environmental problems because the solutions would have to be sought by dealing with these causes.

Why

Though the concept of environment has its origins in contamination of our surroundings – air and water pollution, for example – its value and meaning come into their own only when it is generalised to include all the other concerns that arise out of economic activities that have narrowly defined goals. At the level of analysing causes or designing solutions, pollution is no different from resource depletion – both limit the health of our life support systems and the opportunities for all to live fulfilling lives. It is also necessary to incorporate a broader array of issues, if all actors are to feel interested in coming to the table for dialogues at the international level. We have all been witnesses to the value of this contribution over the past decade of United Nations Summits and Conferences.

Who

Not all these ideas were in line with the dominant thinking at the time and certainly they were not popular with those who decided the international agenda. The process of generating widespread consensus on them was a long and hard one, involving many people, including particularly NGOs and social critics from both the South and the North.

Contribution 2

Broadened and deepened the understanding among developing country governments of the importance of actively taking part in the international dialogue on environment to protect their own national interest.

How

Dr. Khosla was among the first and strongest champions of the relevance of environmental concerns to poor countries, long before such relevance was widely recognised. At Stockholm and the UNEP Prepcoms and numerous global and regional meetings that followed, he was instrumental in mobilising the Indian delegation's leadership role to broaden the consensus on addressing environment as a major development issue, in the process helping to redefine it to encompass the previously mentioned southern concerns. His work at Infoterra provided further opportunities to strengthen developing country commitment to the environment, particularly in government and civil society. Furthermore, in his work in government and later in Development Alternatives, he has repeatedly demonstrated the many reasons why sound environmental management is important for sustainable development. For example, although global climate change was initially put on the international agenda by industrialised countries, he has worked tirelessly to show that it is the developing countries that will pay the heaviest costs.

Why

Bringing the developing countries into the global environmental debate was important because improving resource management practices is central to the eradication of poverty. Their involvement in the early stages can also ensure that the international agenda will incorporate these concerns as a basis for more equitable negotiations in the future. The issues are as profound for their economies as for those of the rich; there are also new opportunities for enhancing international investments in the South for environment and development action.

Above all, many environmental problems can only be solved by concerted action on a global scale.

Who

Many actors were involved in these processes, from Prime Minister Indira Gandhi and other senior Indian officials to diplomats and scientists from both developed and developing countries. Before and after Stockholm, Maurice Strong and his successor at UNEP, Mostafa Tolba, both of whom Ashok Khosla worked with closely, were among the most persuasive in this arena.

Contribution 3

Enabled environmental managers at different levels to make quicker and better decisions on a wide range of environmental matters by designing and creating national and global information systems.

How

From his earliest days in the field of environment, Ashok Khosla was keenly aware of the need for accurate, reliable and timely information. His research at Harvard had already demonstrated how little useful information was available on many of the major resource issues of the time. During his tenure in the Government of India, he was instrumental in setting up national databases and information systems for this purpose. It was this experience that got him deeply involved with helping the then fledgling UNEP set up a global information system on the environment, later to be named Infoterra. At UNEP, he temporarily changed his role from using environmental information to supplying it. Over the past twenty years, under his leadership, Development Alternatives has become one of the premier independent sources of environmental information, operating several major information systems such as DALnet, its technical information service and TARAhaat, its Internet Portal for rural India. Dr. Khosla has continued to work at the national and international levels to build information systems aimed directly at providing knowledge based services to various constituencies concerned with the environment, including IUCN, IISD and the environmental information systems of the Government of India.

Why

Complex issues such as those of the environment need highly sophisticated decision systems and these in turn need speedy access to high quality information based on good science and technical understanding of the issues. These information systems have shown themselves to be invaluable tools for governments, international agencies, field workers and others dealing with the environment.

Who

By their nature, information systems are cooperative endeavors. Much of the early work involved colleagues in the Government of India. At Infoterra, important design inputs were made by Peter Thacher, Deputy Director General of UNEP and other team members. The subsequent work in India has involved environment experts, information specialists and computer scientists.

Contribution 4

Provided decision makers in the North and the South with strong justifications to accord the highest priority to eradication of poverty and improving the environment – leading to the right rhetoric, and increasingly the right action – by creating the intellectual and self-interest based case for urgent action.

How

When India's Prime Minister Indira Gandhi said in 1972 at the Stockholm Conference that "Poverty is the greatest pollution of all", she was simply stating that like any other type of pollution, poverty was the result of short sighted economic policies based on the narrowly defined self-interest of a few at the cost of the many. Poverty is also the greatest polluter of all since the large number of poor in a country like India also have an enormous impact on the environment, simply as a result of meeting their survival needs. But Ashok Khosla has shown in his work in Development Alternatives that the interaction between poverty and environment is much bigger than simple cause-effect. Poverty does degrade the environment and a poor environment intensifies poverty: however, the feedback loops between poverty and environment end up in a vicious downward spiral of resource destruction and human misery. Moreover, its impacts fall selectively on the more vulnerable segments of society: the women, people in fragile eco-zones, the poor and the marginalised. For these reasons, and for the numbers involved (approximately half the world's population), it has been Dr. Khosla's consistent contention and effort that national governments and the international community must give poverty eradication the number one priority, not only for ethical and human rights reasons but also for environmental security.

Why

Whether from the point of view of ethics, of human rights or human dignity, or of environmental or even planetary survival, eradication of poverty has to be the number one priority of decision makers at all levels. Its value to the environment is self-evident

Who

Since, in absolute terms, poverty is still growing in the world, obviously not all decision makers have bought these arguments. However, many civil society leaders, such as Wangari Maathai, Mohamed Yunus and Mechai Viravaidya have for long kept the pressure on them and poverty-environment linkages are now becoming the subject of an increasing number of respectable research projects and diplomatic negotiations.

Contribution 5

Made possible the creation of several hundred thousand livelihoods and regeneration of thousands of hectares of degraded lands by establishing institutions to innovate and deliver environment friendly livelihood technologies to people throughout India.

How

The earliest work of Dr. Khosla on sustainable livelihoods goes back to the early 1980s, long before either sustainable development or the centrality of employment in creating a better environment had become commonplace. His contention, which he often states, was that the basic prerequisites of sustainable development were (i) “to meet the basic needs of everyone” and (ii) “to regenerate, or at least to maintain, the health of the environmental resource base”. This means that the most effective measure for conserving the quality of the environment is the creation of sustainable livelihoods – environment-friendly jobs – on a large but decentralised scale.

Much of the work of the Development Alternatives Group has, under Dr. Khosla’s leadership, been to design and propagate options for creating sustainable livelihoods – “jobs that earn a decent income, give meaning and dignity to life and help to regenerate the environment”. Sustainable livelihoods are usually created by small, local technology based enterprises that use local resources and skills to serve the needs of the local market. Over the past 20 years, Development

Alternatives has designed, demonstrated and marketed many different sustainable livelihood options that, by using renewable resources and minimising wastes, help greatly to improve the environment.

Why

A sustainable livelihood is the most basic human need and creating such livelihoods for everyone seems to be the only way to achieve the twin objectives of eradicating poverty and conserving the environment.

Who

The concept of sustainable livelihoods is gaining acceptance in recent years but for a long time, Development Alternatives was one of the few organisations with research or action programs for off-farm, technology based, environment friendly employment generating enterprises.

Contribution 6

Demonstrated the high potential for nationwide fertility reduction by creating environment-friendly jobs, leading to population stabilisation, environmental regeneration and empowerment.

How

Even today, the international environmental dialogue is largely one of finger pointing: the North ascribing its bleak environmental future to the population growth in the South and the South blaming today's environmental problems on the runaway consumption patterns of the North. Dr. Khosla has, for three decades, been a proponent of the view that each party must do what is necessary and within its control and ability to arrest environmental degradation for itself, locally and for all, globally.

One of the first programs of Development Alternatives was to search for those societal or economic actions that could most cost-effectively reduce the birth rate. Over the years, intensive trial, error and research has clearly demonstrated that in addition to education for girls and access to reproductive health care for women, a sustainable livelihood, particularly for the mother, is the surest and cheapest way to ensure a smaller family. Sustainable livelihoods also create wealth, which in turn is a major source of empowerment.

The environment friendly sustainable livelihoods generated by Dr. Khosla's Development Alternatives, such as those in their handmade recycled paper factory have led to a dramatic reduction in the fertility of the women workers there. So have the livelihoods generated by increasing water availability with check dams in dry areas.

Why

Apart from eradicating poverty, no social goal is possibly as important as bringing human fertility in the world (and therefore among its poor, who tend to have the highest birth rates) down to replacement levels as quickly as possible. Any measure, such as empowering people through creation of sustainable livelihoods that do this is valuable and effective.

Who

I witnessed the value and effectiveness of Ashok Khosla's contribution in this area first hand, when filming a segment for the very first episode in my People Count series, produced for the Cairo Conference in 1994.

At that time, I saw other aspects of his work and decided to make an entire half hour program on him and his work. I returned to India in 1999 and visited the check dams and saw many more of his unique and visionary contributions. I would be happy to send that tape, should the Selection Committee wish to view it.

Contribution 7

Generated widespread awareness of the relationship between systems of governance and the quality of the environment and created growing support for bringing about local control of natural resources.

How

People First, the advocacy organisation led by Ashok Khosla and Development Alternatives, has repeatedly found that local communities whose environment and natural resource base has been destroyed or degraded by careless overuse allow this to happen when they have lost control over the use of these resources and feel alienated from them. This insight has led, over the years, to a major set of initiatives by him to reintroduce the institutions of local self-government, both at the formal and informal level.

The People's Commission on Environment and Development has held some fifty public hearings throughout India on the perception of the local people of the quality of the environment. The findings of these hearings have been published and conveyed to the relevant authorities for action to solve the environmental problems identified. Some of the principles and recommendations of People First have been implemented in a state of India where the results have received wide media and other appreciation.

Overall, this is a long-term project: advocating fundamental changes in the systems of governance of a country is not a popular activity, but People First has laid the groundwork for creating the fundamental changes needed without which the environment in the countryside cannot hope to be saved. It is now generating growing support within government, media and the public.

Why

The colonial systems of governance adopted by most developing countries when they became independent are not conducive to maintaining the health of the environment. They promote over utilisation of resources and alienation of local people from these resources. It is crucial to put the people in charge of their resources, so they will have a reason to look after them.

Who

It was Mahatma Gandhi who best understood the need for local self-governance, and much of the work of Ashok Khosla and his colleagues at Development Alternatives was a straightforward acceptance of those principles and direct implementation of those on in the field. The current philosophy of the DA Group owes much to the work of the Managing Trustee of People First, Mr. Santosh K Sharma, a former civil servant.

Contribution 8

Demonstrated the existence of a vast and untapped market in a developing country such as India for sophisticated, yet simple to use, science based technologies that generate local livelihoods and are good for the environment; proved that environment friendly development can also be a good business.

How

Probably no one has done as much as Dr. Khosla to explore the practical relationship between technology and the environment, particularly in the Third World. Starting with a small initial project grant of \$100,000 from UNEP in 1983, he has built up one of the world's largest organisations working on these issues, the Development Alternatives Group. Their successes with technologies aimed at the village poor to create environment-friendly jobs and to produce goods and services to meet their basic needs are well known.

The products of Development Alternatives and its marketing wing TARA are all designed to create a better environment in one way or another. The JaltARA water testing kit and the TARAfilter for water purification are, of course, directly concerned with environmental quality. The mud-based construction materials and the vertical shaft brick kilns save vast amounts of energy and topsoil, thus conserving resources. Machines that make briquettes out of biomass and gasifiers that use renewable fuels. The papermaking technology uses recycled raw materials. In all cases, these technologies have low or no environmental impact.

Other livelihood technologies, such as the handlooms, paper product manufacture and cement based low cost building elements also create jobs without stressing the environment.

Why

Developing country consumers have huge and growing needs for products and services that require large quantities of raw materials and energy. Environmentally sound and appropriate technology can help them meet these needs with least destruction of the resource base.

Proving that market based approaches can work to deliver such technologies, even in very low income areas is critical for designing methods that are financially viable, and therefore capable of being multiplied, so they can be economically sustainable in the long run.

Innovating technologies that are responsive to the needs of actual clients and yet impose the least possible damage to the environment need institutions that are just as innovatively designed since this has not been done before.

Contribution 9

Demonstrated the applicability and viability of using renewable resources for fulfilling basic needs and minimising environmental damage.

How

Under Dr. Khosla's leadership, Development Alternatives and its associated organisations has designed technologies for construction, energy production, fuels and sustainable livelihood creation that conserve non-renewable resources and rely where possible entirely or predominantly on renewable resources. Their work on mud based construction is a typical example. The technology minimises the use of energy since the building materials need no baking. Moreover, it also minimises the impact on agriculture since it uses no topsoil as raw material.

The entire DESI Power program produces electricity and energy services through decentralised facilities based on renewable fuels.

To propagate the lessons learned, Ashok Khosla co-founded the Factor 10 Club, a group in Europe dedicated to reducing material consumption to one-tenth of what it is today, to demonstrate how it is possible to maintain reasonably advanced lifestyles in industrialised countries with far less use of non-renewable material and energy resources.

Why

Apart from the limited reserves that most non-renewable resources have, it is becoming imperative to switch over to renewable energy to minimise the threat of climate change and local pollution.

Renewable energy and material resources have received more lip service than actual support on the ground. Their costs, lack of convenience in use and technical limitations have not made them attractive enough to become mainstream since they were displaced by fossil fuels, cement, steel and other materials more than a century ago.

The limitations of renewables in economics, convenience and thermal efficiency are actually not fundamental: with better technology and more widespread use, the economies of scale have already started to become evident for many of these resources.

Who

The pioneering work was deeply influenced by the collaboration between Development Alternatives and Dr. Hari N Sharan, who jointly set up DESI Power and provided the engineering know how and developed the delivery systems.

Contribution 10

Created widespread awareness of environmental issues and concern for sustainable development by creating institutions and media products for this purpose.

How

For policy makers, scientists, civil society, and other agents of change, Dr. Khosla has built up ways and means for regular communication and information exchange: the DAInet information system, the Development Alternatives Newsletter and a dozen or so specialised websites. These are widely used and internationally recognised as major sources of information on third world environmental issues, both in India and overseas.

For the general public, Ashok Khosla is a regular contributor to print and electronic media. For several seasons, he broadcast a weekly TV program called the Green Show on the National TV Channel in India. Development Alternatives has also been operating a highly successful environmental activism program, the Community Led Environmental Action Network (CLEAN), which now involves school children in more than thirty cities and towns for monitoring, documenting and publicising the quality of their environment.

For the village communities, Dr. Khosla's focus has been on TARAhaat, which provides both content and local access through the Internet. They have also been conducted, on a limited but quite successful scale, in some experiments with traditional means of communication such as street theatre, storytelling, puppets, and songs with local forms and rhythms.

Why

The forces of the market promoting consumerism and production methods that are damaging to the environment now need to be strongly countered. Without adequate concern and knowledge, there can be little hope for improving environmental quality. Media and communications are essential tools for creating such concern and knowledge.

Dr. Khosla has recruited and trained a group of technically sound experts in his organisations which makes it possible to intensify the impact of their communication efforts.

Who

Many people have contributed to the development of the communication strategies, including particularly the animal rights activist Maneka Gandhi who made the Green Show possible. Dr. Khosla told me that she arranged for the show to be broadcast and helped build the communication skills needed for it among the team.

Contribution 11

Created now synergies and opportunities for environmental insight and action by designing and building institutions that bring together the big and the small, the private and the public, and the global and the local under one umbrella multi-disciplinary organisation.

How

Twenty years ago, Dr. Khosla launched and has since managed and built up a group of organisations that have among them much of the core expertise needed to design and implement meaningful environmental action. For environmental concerns, they have environmental scientists. For community issues, they have social scientists and anthropologists. For innovation, they have engineers, scientists and facilities for R&D. For production and marketing, they have business executives and external partners. And, of course, economists, who are needed for everything.

The infrastructure and equipment for research and the facilities for conducting effective multi-disciplinary research have been carefully built up to enable Dr. Khosla and his teams to produce world class results on problems ranging from purification of drinking water to delivery of Internet services in remote communities.

By using franchising approaches, he has been able to synthesise the best of the big organisation with the responsiveness of the small, local independent unit. And by addressing global issues as well as community ones, they have been able to enrich their understanding in many different and unique ways.

Why

It is often said that partnerships – between disciplines, sectors, agencies – are required to deal with the complexity of environmental issues. While this is certainly a good starting point, much of the environmental problematique needs a more direct and sustained collaboration than is possible through normal types of partnerships.

By combining social objectives with business-like methods; providing small, local initiatives with large scale networking and technical support; and bringing together high quality professionals from different disciplines and sectors, Ashok Khosla's organisations have made significant breakthroughs in designing new environmental strategies and in creating ways to innovate and deliver them on a large scale.

Contribution 12

Delivering environmental solutions of the highest quality for a variety of societal needs by creating and nurturing innovatively designed institutions and ensured their sustainability by building the professionals to lead them.

How

From the beginning of his work in civil society, Dr. Khosla realised that the major problems of the civil society lay in the weakness of their institutional structures, in the personalised style of their management and in the inadequate attention to the need to build the skills of those who would be required to carry them forward into the future.

The organisations of the Development Alternatives Group have demonstrated that these shortcomings need not exist, provided the basic principles of good management are followed by an organisation: introducing objective systems for recruitment and professional advancement; giving ample opportunity for building leadership qualities; providing for a healthy mix of career security and performance based incentives; and so on. Some of these approaches are common in the business sector but not so in either government or civil society.

The evidence points to considerable success in Dr. Khosla's efforts. By setting up successive organisations in the Group and moving his own primary attention to the most recent ones, he has been able to provide space for his younger colleagues to grow into positions of responsibility and accountability while he is still on the scene. Many of the young professionals trained and built by the Development Alternatives experience are now in positions of leadership not only within the Group, but also in many other organisations as well.

Why

Nothing is, perhaps, as important as building up what Dr. Khosla calls "Capacity", and which he has devoted most of his efforts to throughout his career. His recent report on the Capacity 21 program of UNDP shows how central this particular aspect of development is to the possibility of achieving sustainability.

During the weeks I spent in filming some of the Ashok Khosla's work, I personally observed the high level of initiative and responsibility the members of his team have learned to take. I believe this may well be the most important contributions to environment friendly and sustainable development that he has made.