The Implications of Public Policy on Health Status and Quality of Life

A Symposium
Bangalore 1989

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BUREAU REGIONAL DE L'ASIE DU SUD-EST

Tel.: 331 7804 - 23 Telex: 31-65031 & 31-65095

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Dr Thelma Narayan
COMMUNITY HEALTH CELL
No.367, 'Srinivasa Nilaya'
Jakkasandra, I Main
I Block, Koramangala
Bangalore-560 034

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IMPLICATIONS OF PUBLIC POLICY ON HEALTH STATUS AND QUALITY OF LIFE

BANGALORE, 18 - 26 OCTOBER 1989

WORLD HEALTH ORGANIZATION
REGIONAL OFFICE FOR SOUTH EAST ASIA
NEW DELHI

Contents

INTRODUCTION

For many years it was believed that development programmes and projects, especially economic ones, would automatically improve health status. While the link between economic well-being and better overall health is certainly a strong one, an increase in income and economic activity does not necessarily lead to improved health status. The Brundtland Report* focuses attention on the state of the environment and the deleterious effects of development activity which threaten the very survival of our planet. The report brings into sharp focus the effects of development projects and programmes on the environment.

There are three interrelated problems contributing to an impending "Health Crisis". Each of these has worsened during the last few years, together they draw attention to the urgent need for policy adjustment. They are: the avoidable health hazards associated with development; the cost of treatment of diseases caused by industrialization and urbanization; the economic crisis which has slashed the health budgets of many developing countries.

The Inter-Agency Regional Conference on Health Development held in New Delhi from 20 - 24 March 1989 gave specific guidance on how to deal with this crisis for the first time. It recommended that:

1. (a) the capacity of the Ministry of Health be strengthened to analyze development projects to ensure that they do not have a negative impact on health status;

*Our Common Future, The World Commission on Environment and Development, Oxford University Press, 1987, Oxford, England.

(b) this information be communicated to policy makers for policy adjustment;

(c) legal frameworks be developed for protection of health status during development activities (e.g., in resettlement schemes, insecticide use, food pricing, etc.);

2. policy analysis based on existing problems be undertaken, especially on the underlying causes of high morbidity and mortality ;

3. (a) health impact assessment be undertaken to identify those aspects that have an influence on the existing situation;

(b) modifications be suggested which would eliminate the negative effects of development projects.

The Symposium held in Bangalore in 1989 was organized as a follow up activity to the Regional Conference, and is the first activity of its kind not only in the South-East Asian Region, but globally. Its principal objective was to strengthen the negotiating skills of ministries of health and representatives from relevant sectors for defending and protecting health status in development programmes and projects. It focuses on a very crucial but often neglected aspect of intersectoral action for health, namely, ''Implications of Public Policy on Health Status and Quality of Life''.

Since it is impossible to deal with all aspects of public policy, as a first step the relationships between development policies and health status and quality of life were analyzed by studying three important areas in depth: urbanization; industrialization; agricultural development.

The discussions focussed on the actions which could be taken by the relevant sectors to reduce or eliminate health risk factors without abandoning their priority objectives and goals for development in their sector.

In order to facilitate this task three modules were developed. These modules dealt with specific aspects of industrialization, urbanization, and

agricultural development, namely, occupational health and child labour, housing and slums, irrigation and pesticides. Additional case studies, together with country experiences, enriched the analyses.

During the course of discussion it became clear that health professionals appreciated the goals of economic activity and were ready to contribute to the attainment of these goals, however, they were not prepared to do so at the expense of health status. Similarly development planners, and those involved in formulating and implementing economic activities, appreciated that economic benefits can produce health gains.

There are many laws, regulations and policy statements in all the countries which contain most of the specifications required for protecting health status, but unfortunately these have either been partially implemented or not implemented at all. The case approach utilized during the symposium enabled the participants to focus on real issues and, through debate and discussion, to come up with alternative but feasible courses of action.

SUMMARY OF DISCUSSIONS

Introduction

The Symposium was attended by key policy and decision makers, senior implementers from health and other development sectors, experts and researchers from institutes of development studies, development agencies and nongovernmental organizations (NGOs). Participants from the following eight countries attended the symposium: Bangladesh, Bhutan, India, Indonesia, Myanmar, Nepal, Sri Lanka and Thailand (see Annex A for full list of participants).

Discussions focussed on specific issues of development activities, their impact on health status and quality of life, and on methodological problems faced by countries in analyzing policy issues of health relevance. The participants felt that it was an achievement to bring together such a highly heterogeneous, multisectoral, and multi-disciplinary group to deliberate upon a topic which had never before been the subject of such in-depth analysis. (See Annex B for method of work).

Observations and policy options arrived at formed the basis of the discussions that were held during the second phase of the symposium in which participants were joined by policy makers from various sectors in the participating countries. The latter attended in their personal capacities allowing for more frank and critical analyses. It was during the second phase that issues were more sharply identified and the feasibility of policy options scrutinized further.

I. Agricultural Development Policy - Health Linkage

Case on Pesticide Use

The Issue **- Pesticide use is necessary for increasing agricultural production and productivity.**

Although the case presented for discussion dealt with pesticide use in Indian agriculture, it was felt that the situation was similar in all the countries represented. It was agreed that agricultural production must be increased rapidly in order to satisfy the needs of a rapidly growing population, combat undernutrition among certain population groups and respond to food security considerations, in addition to providing employment and income to people in rural areas.

Unfortunately, the scope for increasing agricultural production through horizontal expansion of land is very limited in many places. Cultivated areas which have made a significant contribution in the past have registered a sharp decline over time. Technology to increase yields in the form of improved agricultural practices, use of high yielding varieties of seeds, and increased use of fertilizers and irrigation has had a significant impact on production levels in many places. However, crop varieties used, intensive cultivation practices and new cropping sequences have led to an increase in pest problems in agriculture. The practice of monoculture as a result of the adoption of high yielding varieties has also led to an increase in pest problems. In traditional agriculture the practice of intercropping meant that pests, even if they attacked, did not spread as quickly, nor did they ravage the whole crop.

Increased irrigation has added to the pest problem by creating environments conducive to the reproduction of pests. All of the above factors have resulted in increased use of pesticides. At the same time, pests are becoming increasingly resistant to the pesticides utilized, leading to the application of additional quantities of stronger and more harmful pesticides.

***The Issue* - Adverse Health Impacts of Pesticide Use.**

In looking at the actual and potential impacts on health of pesticide use it was pointed out that pesticides have varying degrees of toxicity on different people, and in different situations. While the research findings are not conclusive on the cause and effect linkages in pesticide use, adverse reactions are highest among workers who are directly exposed to pesticides. Many substances are highly contaminated with residues of DDT, BHC, Pindane, Endrin, and other pesticides. Although the residues appear to be within permissible levels in fruits and spices, they are above the tolerance level in vegetables, cereals, oils and dairy products. In one of the countries it was stated that pesticide poisoning from exposure or involuntary ingestion was the sixth leading cause of hospital deaths in 1987.

Pesticides such as DDT and BHC once applied do not degrade easily and can remain in the environment for as long as twenty years. The soil becomes a reservoir for these pesticides, steadily transferring them to edible crops, trees, and animal life, and polluting the ground water. It was pointed out that Bangalore, once reknowned as a "garden city", now has hardly any birds owing to the intensive agriculture in and around the city, and the subsequent practice of using large amounts of pesticides which have killed both plant and animal life.

It has been observed that adverse reactions to pesticides are highest among workers who are directly exposed to them. Fragmentary evidence in India points to liver injury due to toxic effects of pesticides among workers who spray pesticides. Another study drawn from laboratory tests conducted on animals indicates a higher susceptibility to adverse effects of pesticides among ill nourished people when compared with the effects on better nourished people.

In India high incidence of pesticide residues are found in food, human fat tissue and the atmosphere. This is surprising given the limited use of pesticides in India when compared with countries such as Japan, the United States, and the United Kingdom. It was felt that this phenomenon

is largely attributable to the misuse of pesticides - wrong choice of pesticide, misapplication, faulty storage, etc. This in turn can be ascribed to lack of knowledge. For example, cases were reported in one country where pesticides were stored in the kitchen along with household foodstuffs.

It might be worthwhile for each of the countries in the region to develop a list of essential pesticides similar to the essential drug list. Essential pesticides would be judged according to the following criteria:

i. harmful effects;
ii. cost effectiveness;
iii. efficacy;
iv. convenience in operation.

The list which has already been published by FAO would be taken into consideration when establishing the list of essential pesticides.

Some Policy Options

Legislation - Is it enough?

Some countries have no legislative measures enacted, while others need to strengthen their laws to control production or importation of pesticides and their distribution. Most legislative measures are devoted solely to control measures and little attention is paid to the effects of human exposure to pesticide and the implementation of monitoring activities to ensure judicious use. It was pointed out that there is a strong need for interdisciplinary and interinstitutional coordination to avoid duplication of effort.

It was felt that controlling the use of pesticides by legislative measures or administrative procedures alone is not simple. The vested interests of industry, both the manufacturers of the pesticides as well as the producers of the agricultural commodities, are involved. If one type of pesticide is banned, another will almost automatically appear in the market claiming to be less harmful and more effective.

Effective measures to prevent or decrease the adverse health effects of pesticides should be sought, and the cost of these measures should be borne by the manufacturers. In this way the "polluters pay" principle would be observed. At the same time, pesticide manufacturers should provide proof that their products, which in principal are less harmful or harmless to health, would not leave behind any toxic residue in soil, agricultural products or animals.

Research and development on pesticides should be encouraged at country and regional levels. Relevant departments in universities and institutes could provide the necessary assistance in carrying out research and experiments in this area.

Community Involvement

While existing legislation on pesticide use is fairly adequate in some of the countries, the actual implementation of these legal provisions has not been satisfactory. One of the reasons for this is the limited capacity to install an adequate supervisory mechanism due to cost implications in employing sufficient staff. Another reason is as a result of human failure.

In order to overcome these problems in implementation and bring about the desired results in the control of pesticides and reduction of adverse effects, pressures exerted through society or the community would be very effective. Community involvement and popular participation in surveillance and monitoring of the use of safer products and safety measures should be fostered. In some countries the task could be started immediately since there have already been successful instances of the participatory approach to planning, implementing, monitoring and evaluation.

Pesticide Epidemiology and Toxicology in Health Curricula

Pesticide epidemiology and toxicology should be introduced in health curricula to enable health personnel to analyze and prevent additional health problems caused by the use and misuse of pesticides. In some countries traditional pest control practices exist and are used effectively and these should be encouraged. Research on alternative cropping patterns and biotechnology should be carried out to develop safe and cost-effective methods of pest control. In these endeavours cooperation of relevant international organizations should be solicited if necessary.

Dissemination of knowledge through media

Much can be done to mitigate the ill-effects of pesticides if people are made aware of the harmful effects. In the face of widespread illiteracy, alternative means to written messages should be found to inform people of the harmful effects of pesticides, and how to apply safety measures. The media should be utilized to inform farmers

and users of pesticides on how pesticides should be handled, used and stored.

Action Research

Although the potential harmful effects of pesticide have been derived from indirect studies of the toxic residues in food materials, atmosphere, and soil, the ill-effects have not been firmly established with regard to human beings. Action research is needed in at least three areas so that decision makers will be able to examine the trade off between threatening health hazards and increases in agricultural production and, on the basis of this, make informed decisions. The areas suggested for action are:

i. quantitative analysis of actual harmful effects of pesticides including residues in food and environment;

ii. means of substituting harmful pesticides with traditional methods of pest control;

iii. possibilities of reducing the cost of effective but less harmful types of pesticides.

Case on Large Scale Water Development Projects

The Issue **- Growing need for water development projects for irrigation and energy.**

The Narmada valley project was presented as an example of a large water development project which many countries are familiar with. This project is a controversial multipurpose project which has been receiving a great deal of coverage lately in the press and is the subject of a debate between the government, donors and beneficiaries.

Efficient utilization of water resources assumes great significance, particularly in the context of a rapidly growing population. The Narmada Valley Project was initiated to provide a range of benefits to large numbers of people residing in the three Indian states of Gujarat, Madhya Pradesh and Maharashtra. In India, as in many countries, multipurpose and other dam projects are regarded as essential for meeting the requirements of irrigation for agriculture, electricity for industries, as well as providing flood control.

The Issue **- Urgent need to mitigate adverse health effects caused by changes in the environment.**

It was pointed out during discussion that experience of similar projects in other countries, while desirable for enhancing economic development, posed a number of problems with regard to resettlement and adverse effects on environment and health.

In the case of the Narmada Valley project cultivable land on which to relocate the population displaced by the project was not available. Remaining grazing lands had hardly any soil cover, were of very poor quality, and were totally unfit for cultivation. Cash compensation provided was inadequate in many cases and resulted in lowered living standards and reduced quality of life among a large majority of displaced persons.

In Narmada, most of the displaced populations were tribal people. The sudden influx of modern systems, destruction of the environment on which their lives depended and, ultimately, displacement and resettlement left tradition bound tribal families bewildered, powerless and on the verge of total social, cultural and economic collapse. Many displaced people drifted toward cities where they were unable to cope with the alien environment and hardship. Those who have resettled still do not have semipermanent houses and employment. Mortality rates have risen, food reserves and incomes have fallen, and cattle are dying.

The building of irrigation dams increases the incidence of some dis-

eases. Vector borne diseases such as malaria and schistosomiasis can be increased through the creation of new breeding sites as a result of water entrapment, or they can be brought into the area by the immigrant laborers. Poor working conditions further increase the risk of malaria.

The incidence of filaria, cholera, gastroenteritis, and other water-borne diseases is also likely to increase when dams are built. Analysis of the diseases of the command areas shows that malaria, schistosomiasis and filaria require surveillance, monitoring and control measures, although other possible ailments such as flurosis, skin infections, and sexually transmitted diseases have also been cited as problems requiring attention.

In the case of the Narmada Valley project the Narmada Planning Group entrusted a study to the Department of Botany of M.S. University, Baroda to assess the impact of the project on the health profile of the population residing in the Gujarat portion of the catchment area both above the Narmada dam site as well as downstream. Information regarding the incidence of various diseases was collected and the analysis of the disease profile in the command area showed that the three important diseases which would require surveillance, monitoring and control measures were malaria, schistosomiasis, and filaria. A work plan for the health sector was prepared by the Narmada Planning Group with the following objectives:

1. To provide for systematic and continuous monitoring of the health profile of the project area.

2. To provide for suitable infrastructure facilities to take care of preventive and curative measures required in the project area.

Despite the above study and work plan it was noted that no representative from health appeared on either the Narmada High Power Committee, or the Narmada Planning Group, nor were any further studies undertaken to assess, monitor or evaluate the health situation. The health sector thus appears to have been excluded from the planning and implementation of the project. At the same time the health sector did not take the initiative, based on the findings of the study and work plan, to take an

active role in ensuring that the health status of the population was protected during the project life span.

Some Policy Options

Health Impact Analysis Assessment

In order to prevent and control these health conditions epidemiological surveys of the command area must be carried out prior to the implementation of such projects. New diseases that migrant laborers and other people coming to the area may bring with them should be taken into account in the health profile of the area and health interventions undertaken as required.

Health impact analysis should include the following:

(a) epidemiological study of the affected area;

(b) identification of probable diseases associated with the impounding of water in big reservoirs;

(c) base line health profile of the migrant people and local population to find out the possible morbidity pattern.

The Ministry of Health should play a pivotal role in persuading the concerned sector, or sectors, such as ministries of Agriculture, Water Resources, and Interior to introduce control and prevention measures during all phases of the project. To facilitate this process it was suggested that an organizational mechanism should be set up highlighting health impact considerations in non-health

ministries. Representation from ministries of health has so far been neglected in committees responsible for providing guidelines for the implementation of large scale water development projects, as well as in committees that oversee the implementation.

In some countries committees have already been set up with representation from all the sectors concerned. Steps need to be established so that these sectors share the responsibility for carrying out epidemiological and other health studies required, the costs of which should be incorporated in the project costs.

Surveillance and monitoring

Appropriate methods of surveillance and monitoring of health status, including early warning of emerging health hazards should be developed and followed through during the implementation of the project. In this connection the formation of independent watch dog groups (social organizations, NGOs) is helpful. Every effort should be made to promote them at the local level to assist people in obtaining promotive, preventive, curative and rehabilitative services, as well as in securing compensation for displacements or suffering caused by the project.

Bearing the cost of control and remedial measures

The externalities of a project such as deterioration of health status, loss of income, adverse environmental effects due to massive deforestation should be included in the costing of the project during the feasibility study. As an example of costing, mortality and morbidity rates could be studied and baseline data established so that curative

measures are calculated for the restoration of the health status to bench mark levels at least.

In many instances in spite of the availability of control measures and the technology to implement them, they fail to be accommodated on the pretext that the unit cost of production would be too high, thereby rendering the project infeasible. Even when control and safety measures are included in the formulation phase of the project, these are the first to be removed when austerity measures are applied. Many are unaware, or do not appreciate, that the costs incurred to cure health problems created are sometimes higher than the costs of taking preventive measures.

An example of inadequate planning occurred when the drainage component of an irrigation dam project in a country was removed in a drive to cut down project expenses. No one noticed that only economic parameters were used for monitoring, while all health status parameters had been omitted. A few years after the completion of the project a serious malaria epidemic occurred of such magnitude that the country and policy makers had, and still have, great difficulty in containing it. The resulting costs have proved to be very high.

When the cost of prevention and control of adverse health impacts is not borne by the project somebody still has to pay the cost. This is usually the health sector operating under stringent budgets, or the individuals themselves.

Role of International Organizations

International agencies should play an active role in mobilizing the necessary resources to help countries introduce all the safeguards required in large scale water development projects. A good example can be seen in the case of the Narmada Valley project where the World Bank emphasized the need to analyze the environmental issues, as well as the hazards to health, so that the preventive measures required could be accommodated.

Action Research

Actions to be taken by relevant sectors during feasibility studies and project implementation should be based on solid evidence of the potential adverse effects of large scale water development projects. Action research is needed to carry out epidemiological studies of command areas and to establish baseline health profiles of both migrant and local populations in affected areas to establish morbidity and mortality patterns.

Research and development institutes could be instrumental in establishing the evidence of negative health linkages associated with large scale water development projects by carrying out detailed studies on the diseases associated with water impoundment.

II. Industrialization Policy - Health Linkage

Case on Occupational Health Hazards and Safety in Industries

The Issue - Whilst it is agreed that industrialization as part of the development process may have a positive effect on populations through the provision of increased incomes, goods and services, industrialization also creates health hazards and causes accidents, often leading to disability and deaths.

A poignant example is given of the kind of health hazards that are found in the case of the slate pencil factories of Mandsaur in Madhya Pradesh. There are some 90 slate pencil cutting units in the area and almost the entire population is employed in this industry. A study showed that there is hardly a man alive over 40 years of age in the area as a result of silicosis. The saw dust generated during the cutting process is composed of 50-55 per cent silica and is breathed in directly by the cutters. The first symptoms of silicosis are seen after six months in coughs and colds, followed by chest pains etc. The study revealed that 55 per cent of the workers had silicosis and 18 per cent had an advanced form of the disease. Developing countries suffer from problems of low per capita income with a highly skewed distribution of wealth, widespread poverty and unemployment, high costs of production, poor quality of products and a fast-growing population. Industrialization is an important means of alleviating these economic problems. For this reason it was unanimously felt that industrialization should be encouraged but that the proper steps should be taken to prevent undesirable effects on health. These steps should be taken in conjunction with industrial development efforts, and not as an afterthought, or as a "crisis management" response to the health problems created.

Some Policy Options

Occupational Health Assessments

One of the first steps to be taken by the countries of the region is to assess the occupational health situation using suitable indicators. Among the indicators suggested were:

i. the average age of death of industrial workers;
ii. morbidity due to service in industry;
iii. mortality due to occupational diseases in industry;
iv. case fatality rate due to accidents;
v. active days lost as a result of absenteeism of sick workers.

The Role of Legislation

Employers already burdened with high costs and limited markets, look upon the costs of prevention of health hazards and treatment of health problems as an untenable additional cost. Enterprise managers are naturally concerned about increasing production and productivity. Removal of health hazards of industrialization in a labour surplus economy may not add to productivity improvements, but it increases the cost of manufacturing. Management would therefore tend to ignore health hazards in such circumstances unless they are forced to do something about it. Workers who in many cases are already suffering from undernutrition and have very sub-

standard living conditions generally value getting any job, irrespective of the likely health hazards, and would expect employers to compensate them for any injury, death or disability resulting from their occupation.

But simply compelling employers to adopt suitable measures as legislated in the Factories Act, the Workmen's Compensation Act and the Employees State Insurance Act, would pose problems as shown in the case studies from India. The department of factories of every state is empowered to enforce these laws, but success depends on availability of information, organizational strength of the implementing body and the judiciary, as well as knowledge of the cost of occupational health hazards and safety measures.

These laws should be implemented not through the welfare system which would burden workers further through increased taxes, but rather through the industrial sector, making their concurrence with laws a prerequisite for obtaining an industrial licence.

The argument can be presented to employers that taking into consideration the health and welfare of their employees and their families can be a good investment rather than an extra burden. The Japanese example is often cited here as an illustration of how very high productivity (quality and quantity) can be combined with a complete package of health and welfare benefits for workers and their families during their lifetime up to death, including the provision of health services, education for children, housing, etc., provided for by the employer.

Ministries of health and industry should establish a

regular dialogue with one another to discuss means of minimizing pollution through the siting of industries, their spatial planning, and the adoption of preventive and promotive measures to safeguard the health of people already located near to factories. A coordinating body could be set up to oversee the plan and activities of different sectors.

Providing Incentives

Employers should be stimulated to reduce the incidence of ill health and accidents in their companies. Among the practical suggestions which arose during the symposium was a yearly reduction of accident insurance premiums as an incentive to employers to reduce accidents.

Employers should be encouraged to set up company clinics and monitor the success of their management by the degree to which health status is maintained amongst at risk employees. Various schemes could be introduced on an experimental basis in this area. Employers could create a fund in the form of a health premium per employee per unit of time, with health personnel being paid the remainder of the premium after all charges for treating employees have been deducted. In this way health personnel too would be rewarded on the basis of the number of people who do <u>not</u> fall ill.

There are difficulties in applying such a scheme across the board as illness needs to be defined in relation to the nature of the particular industry i.e., the health effects of bauxite industries are different from those associated with cement works.

Workers Action

Trade unions and workers associations have been instrumental in defining workers' rights and negotiating for wages and compensation. These organizations should now be encouraged to take relevant steps for the improvement of the health status of their members by working out innovative proposals for negotiation with employers.

Dissemination of knowledge to the people: demystification of health

It is necessary to educate workers on the importance of safety and prevention measures. To many, health becomes a priority only when it interferes with their ability to work and earn a living.

In the struggle to protect the environment many people from a variety of backgrounds and education have understood the basic message of the environmentalists and have been persuaded to act to prevent environmental damage. An example can be seen in the famous "chip ko" movement where women protected trees by virtually clasping them in their arms to prevent them from being felled by unscrupulous profiteers.

The health sector could learn from what has been accomplished by the environmental movement and launch a large scale public campaign on occupational health which would be simply stated in order to be understood by all. The whole process of dissemination of knowledge and education regarding occupational health, pollution, and other aspects of industrial health and safety, should be

launched worldwide in a systematic manner. WHO should take an active role in advocating and conducting a community strategy in this area.

Action Research

Research institutes and individual researchers working in this area should avoid carrying out research that has already been undertaken elsewhere in the industrialized and in the developing countries. There is a wealth of knowledge on such areas as occupational health hazards and industrial hygiene which can be effectively used.

Simple and practical methods must be developed for studying both the health of workers and the health factors of the work environment. This will include regular monitoring of workers' health and the working environment, applications of the principles of industrial hygiene engineering and ergonomics, accident reporting and identification of at risk groups in different situations. The science of ergonomics which aims to relate the fitness of machines and tools to human and physiological capacities provides a valuable contribution to improving occupational health.

Detailed case studies of selected hazardous industries would help pinpoint critical areas amenable to immediate change and would also reveal areas where policy changes in different interlinking sectors would be necessary to improve workers health.

These could be complemented by case studies of successful and innovative occupational health interventions in industries. Studies of the cultural factors influencing human behaviour in industry would lead to better understanding of the role these play in occupational health.

Case on Child Labour

The Issue **- Child labour - a symptom of poverty.**

Child labour was considered unacceptable because of its exploita-

tive nature, the effect of adverse working conditions, and the denial of educational and recreational opportunities on the health and quality of life of children. Children working in industry suffer from physical and mental health problems, and are often the victims of accidents at the place of work. In response to this, relevant legislations have been enacted and policies announced which govern the participation of children in the labour force. It is now desirable to look at the evolution of these policies and strategies, the organizational arrangements made to implement them, and the managerial actions taken to benefit working children's health.

Income from child labour plays a very important role in augmenting the overall income of a family. According to a study conducted in Bombay, child workers were found to contribute about 30 per cent of the total monthly household income. A recent study in Bangalore has reported that 6 per cent of working children earned 100 per cent of the family income, while 18 per cent generated between 50 and 100 per cent of the family income.

An investigation of the reasons for entry of the children into the industrial labour force showed that 47.5 per cent of the children joined the labour force at the insistence of their parents. Similarly, according to a 1979 ILO survey 23.4 per cent of working children cited poverty as their reason for working.

Children are preferred to adult workers because they are docile and do not grumble or revolt. They are agile, and are paid less than adults. At times they are not paid at all on the pretext of training. Working children get into a vicious circle; as their participation in the workforce continues the drop out rate from schools increases, and as children fall further behind with their schoolwork they find it increasingly difficult to go back to school. This phenomenon is not solely the result of poverty, but has roots in the inadequacies of the education system, which does not allow for education and work to coexist. In some developing countries child labour has been said to cause unemployment among adults. This in itself increases the incidence of child labour since unemployed adults force children to work to support the family.

The Issue - Poor working conditions and the health status of children

Children are usually employed in industries such as match making, beedi* making, diamond polishing, sari embroidery, fish peeling, glass works, plantations, tailoring, brick works, and the handloom textiles industry. Because of the diversity of the institutions in which they work, their working conditions vary greatly. These conditions are usually very precarious since employers who choose children as workers are those who do not want to pay "adult wages", or give the amenities expected by adult laborers.

Common characteristics of their working conditions include forced inhalation of toxic powders, metal dust, paint or paint thinner, noxious fumes which burn the eyes, possibility of electrocution, late night work, exposure to high temperatures and deafening noise, frequent industrial accidents, low wages, payment on a piece rate basis, etc.

Such working conditions lead to adverse health consequences. Hard data on the health status of working children is scarce, but there are many known or potential effects on children's health which can be cited. A series of examples were provided to the symposium participants on the conditions of work for children. In the lock industry accidents with bodily injury (loss of fingertips), occur as a result of exhaustion and carelessness when carrying out the tasks of polishing, electroplating, spray painting and working on hard presses. In this industry child workers are exposed to the health risks of dealing with toxic chemicals and electrocution. Child workers suffer from asthma, tuberculosis and other chest diseases, accidental poisoning and mental disorders.

In the slate pencil manufacturing industry the incidence of silicosis indicates that children are more susceptible to this occupational hazard than adults in the same industry. In the agate industry increases in the prevalence of pneumoconiosis are directly related to the duration of exposure. In a beedi factory, workers experience vomiting, headache,

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* Beedi - small Indian cigarettes

giddiness, weakness and loss of appetite. In carpet weaving, workers experience respiratory tract infection, headache, backache, and joint pains. In tanning units the wet and slippery surface in the work area results in numerous accidental falls into the vats, some of which are fatal. The emanation of hydrogen sulphate from dirty tanning pots is life threatening and many of the chemicals used in tanning cause dermatitis. In chrome tanning, potential health threats include chrome ulceration on the hands and occasional perforation of the nasal septum.

Children handling microscopically fine wire develope marked visual impairments within 5-8 years. Children using handtools designed for adults present a higher risk of fatigue and injury, while children using seats and workbenches designed for adults have more problems in the musculoskeletal system.

Policy Options

The Effectiveness of Legislation

Many countries in the region have recognized the adverse health and social effects on children who begin to work early and have enacted laws to protect them. In India, for example, where child labour dates back to 1881, the Constitution, in the Directive Principle of State Policy, states that no child below the age of fourteen years shall be employed to work in any factory or mine, or other hazardous employment. There are many acts which specify different minimum ages at which children can start work, as well as required working hours, rest, and medical examinations. This indicates that the policy response to the problems of child labour is adequate.

There is, however, a big gap between these policy statements and their translation into action. Recent legis-

lation in India prohibits the employment of children under fourteen in specified industries which are considered hazardous, yet a large number of children are still employed in these industries. It is clear, therefore, that the existing legislation does not adequately protect the rights of the child worker.

The main constraint is perhaps the lack of infrastructure to enforce legislation. The enforcement of child labour laws and regulations requires the establishment of special monitoring bodies with staff and services specially adapted to the total needs of children in the labour force. The second constraint arises from the unorganized nature of child labour in which little is officially known. It is very difficult to penetrate these home based industries that escape formal supervision. At the same time the home based industries are encouraged to flourish as an important means of generating income and employment, thereby reducing poverty, as well as encouraging initiative and creativity.

Poverty - the root cause

The alleviation of poverty is the principal long term strategy that would drastically diminish child labour since poverty appears to be the root cause. It is hoped that anti-poverty policies, educational policies, health-for-all policies, nutritional policies and stepped up social services will all help this pernicious situation.

However a number of other measures need to be taken. Incentives or credit should be given to industries who employ minimal child labour and provide adequate prospects and safety measures for child workers. Special measures should be adopted to make it less attractive for

families to send their children to work such as ensuring better income generating activities for families who depend on the income from child labour. This would entail developing a profile of these families and educating the community. Social pressure would help to bring about greater change than simply relying on legislative and administrative measures.

Different responses to different needs

The issue of child labour presents a complex picture since it entails such elements as employment in the formal or informal sector, and a variety of employment conditions. In order to deal with the different factors preempting passage into the work force, child labour needs to be viewed from several different perspectives and the problems responded to accordingly.

It was suggested that child labour can be divided into three categories:

i. work in the informal sector;
ii. work in the formal sector;
iii. those working voluntarily.

There are different approaches to each of these categories. For working children still attending schools the schools could experiment by having special arrangements alongside the school curriculum for promoting income generating activities that would help the child and his family, e.g., special crafts. Schools could be instrumental in helping children during school holidays, while others could organize educational classes in the work place for children working in the formal sector and voluntarily, at the same time ensuring that working children

attain normal growth and development.

For children working in the informal sector the task is complicated as there are few, if any, indicators of where these children are, what they are doing and how many they are. Community-based organizations can be useful in reaching out to these children, finding ways to help them earn a living and at the same time mature intellectually, socially and emotionally by encouraging income-generating activities, arranging for health care and informal schooling, and facilitating a dialogue to air concerns and find solutions.

Action Research

Action research in this area must be innovative in order to respond effectively to the overall complexity and social nature of this issue.

On the economic side, in-depth studies are needed on child labour in small scale and cottage industries which often escape formal data gathering. A number of comparative studies are required to establish a solid information base on the net economic effect on family income where there are working children.

On the social side, of particular importance is the need to tailor educational opportunities to the requirements of working children. Educational programmes in the form of condensed modules need to be developed and adapted for this purpose.

III.Urbanization Policy - Health Linkage

Cases on Housing in Urban Areas and Slums

The Issue **- Rapid urban population increases are not accompanied by development of adequate infrastructure.**

Shelter, along with food and clothing, is regarded as a basic need for human life. The World Health Organization in one of its recent publications observed that housing is intimately related to health. The structure, location, facilities, environment and uses of human shelter have a strong impact on the state of physical, mental and social well-being. Good housing conditions provide a defence against death, disease and injury, while poor housing conditions increase vulnerability to these factors.

The United Nations Center for Human Settlements (UNCHS - Habitat) has emphasized the role of housing in healthy living. Although the relationship between housing and health is both intimate and complex, and is compounded by a myriad of factors such as poverty, nutrition, levels of income and literacy which act together to defy the establishment of precise links, it can be said that poor housing is always associated with higher mortality and morbidity rates. It is estimated that 5 million deaths i.e. 10 per cent of all deaths worldwide, could be prevented if housing conditions everywhere in the world could be improved.

In most developing countries rapid urbanization is occurring, but development of various infrastructural facilities, such as adequate housing, water supply, sanitation, and transport has not kept pace with the growth of the urban population.

The Issue **- Proliferation of slums in large urban settlements severely affects the health of the urban poor.**

Unsatisfactory sanitation measures in slum areas are conducive to the spread of diseases. Damp, unsanitary ill-ventilated and overcrowded houses expose inhabitants to a variety of health problems. Waste which

is indiscriminately thrown into open spaces for lack of proper disposal facilities attract flies, which leads to food contamination and diseases such as typhoid, cholera and dysentery.

A study of slum areas in India showed that the incidence of tuberculosis in an upgraded slum was ten times higher than that in a nearby non-slum area, viral infections were two to five times greater and skin diseases twice as high.

Slum dwellers are often poor, ignorant and, due to their difficult situation, do not appreciate the implications and importance of preventive measures to ensure good health. Very often they have a fatalistic attitude towards diseases and consequently do not readily accept or cooperate with programmes such as immunization schemes.

Suggested Policy Options

This situation has attracted the attention of policy makers. It is believed that in fulfilling the basic needs of the people, housing ranks next in importance to food and clothing. The development of housing must be given a high priority in society, since it fulfills many other needs such as raising the standards of sanitation, creating additional employment, dispersing economic activity and improving urban renewal. Past policy responses have included both slum clearance and attempts to upgrade, as well as self-help schemes and granting of legal title to squatters on occupied land.

Housing Legislation

Legislative measures or policy declarations alone are not enough. The constraints posed by inadequate resources, urban legislation and other related policies must

be taken into consideration in order to ensure effective implementation. Although the urban policy guidelines developed from time to time by governments have continued to emphasize the importance of the housing sector, the programmes initiated and the investments made in many countries have responded to only a small fraction of the enormous problem of urban housing shortages in countries. Attention needs to be paid to improving access to housing inputs such as land, finance, building materials and services. Legal, institutional and administrative constraints which discourage people from taking housing initiatives and force them to neglect the proper maintenance of existing housing stock should be minimized.

Because of the social, physical and economic complexity of slum formation it is very difficult to assess how far policies and schemes introduced by governments have been effective in checking the growth of slums, or arresting any further deterioration in the health and quality of life of slum dwellers. In examining the policies of India one sees a pressing need to develop a comprehensive, perhaps segmented policy for tackling the problems in such a large country. For instance the employment profile varies with the industrial/trade scenarios in cities, with slum dwellers of large cities being more dependant on regular jobs than slum dwellers of smaller cities.

The Need for Planning

It was pointed out that overcrowding in large cities and metropolises has been the result of lack of planning to encourage the development of smaller towns and growth centers at appropriate distances from one another. When a number of smaller towns exists around the main city, movement of people is better organized and contained,

relieving the main city of overcrowding and congestion.

Location of industries in big cities aggravates the problem. Development of smaller towns and industrial growth centers at appropriate distances from cities should be encouraged. This could be done through siting of industrial parks and creation of special incentives such as tax exemptions, subsidies, credits, and relaxation of input restrictions to attract private sector investment in physical infrastructure development.

Beyond planning - slums as a socioeconomic problem

Although slum improvement has been attracting the notice of many governments, the policies have room for improvement. There are few examples, if any, of a systematic approach to tackling the underlying problems of urban deprivation or of providing a comprehensive plan for the health and well-being of all city-dwellers, including those living in slum areas. While there are short and long-term plans that sometimes reach out to vulnerable groups, they seldom encompass all the relevant needs, resources, and activities and give priority to income generation and education, as well as water supply, housing, sanitation and nutrition. Achievement of the above relies on political will to take the appropriate policy measures and proper intersectoral coordination among all implementing agencies.

Tackling a problem of this complexity will involve many sectors at all levels. The importance of the educational component cannot be overemphasized. It must be wide in scope and must operate at various levels, creating awareness at some, changing attitudes at others, and imparting skills in management and coordination to key

personnel. The poverty of slum occupants, their fatalistic outlook and resignation are constraints to policy and programme implementation. Social preparation and provision of information and education of the urban poor are essential in bringing about a positive result.

Action Research

i. a detailed survey of the urban housing situation with emphasis on estimating existing stock, quality, demand and affordability;

ii. a profile of urban inhabitants and their living conditions to determine the most vulnerable groups;

iii. development of simple, appropriate and adequate indicators for monitoring health status in slums through periodic community morbidity surveys and specific epidemiological investigations;

iv. detailed investigation of housing finance to provide information on types of resources available and their sustainability;

v. investigations of the roles of the private sector and voluntary organizations and their resources in slum improvement programmes;

vi. in-depth study of legislation to identify the constraints and barriers to implementation and action;

vii. action research that investigates existing public health laws and regulations covering housing should be analyzed, with a view to assessing whether these are too restrictive

for the poor and impossible for them to achieve. Tests should be carried out to ascertain the effect of these laws and regulations on the poor's initiatives regarding their own housing;

viii. study of the health effects of housing with special reference to the effects of overcrowding as a result of shortage of housing;

ix. the effect that certain primary health care schemes would have on the "health quality" of the slum, i.e., from the standpoint of personal, communal health improvements, to the total environment of the slum;

x. detailed study to enable spatial planning for a viable hier archical system of human settlements (including the growth centers/points and satellite towns);

xi. the effect of income-generating activities, self-help schemes, and encouraged-entrepreneurship through the use of seed money should be investigated.

METHODOLOGIES FOR POLICY ANALYSIS

Discussions on the six different case studies highlighted the complex nature of the links between development policies and health outcomes. Numerous examples were given of the ways in which health status could be further protected from the adverse effects of development programmes, especially economic ones.

The heterogenous mix of policymakers and senior officials from different sectors, experts and researchers from institutes of development studies, development agencies and NGOs allowed for a broad range of policy options to be tabled during discussions. The utilization of policy analysis as an important process that contributes to an eventual policy adjustment by analyzing the weaknesses, the outcomes and possible options was fully discussed.

A policy can be defined as a broad statement of goals, objectives, and means that creates the framework for government activity*. Policies often take the form of explicit written documents, but they may also be implicit or unwritten.

Development policies are designed to encourage economic growth and improve infrastructure, services, industry, commerce, and community development. These may be accompanied by policies to stimulate social and political development. Policies are formulated at the national, regional and local levels. They may be profoundly affected by a variety of elements both within the country itself such as the economic or geographical situation, as well as by elements outside country borders such as the international economic and political climate.

Policy makers in the public sector face difficult choices in deciding how public resources are to be allocated. Policy analysis provides a tool for carrying out careful analysis of the advantages and disadvantages of each course of action in order to make sensible policy choices. It is acknowledged that certain actions are needed in some relevant sectors, so

*M. Grindle, "Policy Content and Context in Implementation", Politics and Policy Implementation in the Third World, M. Grindle, ed. Princeton, N.J: Princeton University Press 1980.

as to generate favorable health outcomes. The issue is how to promote such actions within non-health sectors which have minimal adverse health outcomes, and others which have maximal favorable health outcomes. The strategy for achieving the latter has to include an important element viz, how to make public policy makers in non-health sectors realize the importance of health effect considerations in their decisions pertaining to the concerned sector. This necessitates thorough appraisal of public policies in non-health sectors from the special perspectives of the health sector.

Steps for Policy Analysis

Situation Analysis

Policy makers need to be apprised of the current situation with regard to health effects of their sectoral policies. This calls for situation analysis. Among other things, such an analysis will include:

(a) identification of explicit and implicit policies governing the sector;

(b) assessment of elements in these policies with likely favorable/unfavorable health effects;

(c) evaluation of implementation of policies (such as legislation, enforcement machinery or organizational arrangements, public relations);

(d) incorporation of feed-backs from policy implementation to further policy adjustments, planning processes and system designing;

(e) **context analysis** which is an examination of the socio-economic, political and techno-

logical setting within which a policy is formulated. It includes:

i. **process analysis** (i.e., the understanding of the ways in which policy decisions and plans are arrived at and implemented or evaluated; expected and actual roles of various Ministries and national/international agencies);

ii. **risk analysis** (i.e., explicit assessment of health risks associated with development policies based on available knowledge of life risks, current epidemiological investigations);

iii **institution analysis** (i.e., evaluation of the strengths, weaknesses and opportunities available in existing institutional arrangements for policy formulation; management information systems; programme planning, programme implementation, monitoring and evaluation);

iv. **impact analysis** i.e.,(systems of assessment of gains/side effects of specific policies and programmes, especially from the health and quality of life considerations;

Policy analysis sometimes includes Social Cost Benefit Analysis, although the latter has been considered less useful in recent years. Nevertheless, should this step be carried out, it consists of the appraisal of options in terms of:

i. economic costs (in money terms);

ii. economic benefits (in money terms);

iii. social costs (intangibles expressed in money terms);

iv. social benefits (tangible or intangible non-economic benefits expressed in money terms);

v. weighing of overall costs and benefits through computation of a Cost Benefit Ratio for each available option;

vi. comparison of these options to decide on one or more of these.

Resource Allocation Models:

Public policy makers are often confronted with decision situations in which choice is not in terms of "Yes" or "No" to a certain programme option, since many such options can be justified. In such situations, the problem can be resolved through a resource allocation model. Resource allocation models use optimization techniques such as Linear Programming or input-output Analysis for allocation of scarce health sector funds under various constraints. For example in a country a model has been developed to examine the feasibility and economic implications of redesigning a nation's industrial structure on considerations of inputs, outputs, pollution effects, technologies for pollution control etc., so that pollution is significantly prevented or reduced.

Experimental and Quasi-Experimental Studies:

The greatest hurdle in catalyzing intersectoral action in support of

health is the lack of hard data demonstrating health effects of policies in non-health sectors. The best solution to this problem lies in conducting scientifically designed experiments and effects of specific policies and programmes. For example, prior to construction of a dam the following may be carried out:

(a) a pre-study of the command area of the dam in terms of epidemiological situation and quality of life;

(b) a study as above in an area (control group) similar in many characteristics but not in the command area of any major dam;

(c) studies similar to (a) and (b) in respect of minor irrigation projects in comparable areas;

(d) post-study in all the areas treated as experimental (treatment) areas and control areas;

(e) analysis the data collected to evaluate net health (and other) effects of the policies of major/minor irrigation projects;

Similar experimental projects can be designed for problems such as:

(a) estimation of net health effects of mounting a special slum health facility or a child labour health facility;

(b) estimation of the impact of a special health education drive targeting farmers to mitigate adverse health effects of pesticide use in agriculture;

Unfortunately, however, public policy makers are often not willing to wait for long periods of time to observe the outcomes of experimental studies before they make policy decisions. A more realistic approach is to conduct quasi-experimental studies or analyze natural experiments.

Examples of such studies include:

(a) estimation of differential health status and quality of life in families (i) which include child labour, and (ii) which do not contribute child labour;

(b) determination of the health status of families living in one-room and two-room non-slum accommodations, and others living in slums;

(c) estimation of the occupational health situation (morbidity levels) in institutions with varying levels of health care facilities;

(d) assessment of the health status of farmers engaged in production of different crops involving varying levels of pesticide use.

Multivariate Statistical Analysis/Area Analysis:

Association analysis using multivariate techniques with areas/institutions/groups of individuals as units of analysis provides yet another strong methodological option. The techniques involved are multiple regression, factor analysis, multiple classification analysis etc.

A multivariate study enables estimation of net effect of each independent variable on any one of the dependent variables, based on secondary data sources. Examples of other studies using such approaches are:

(a) using states as units of analysis, estimating the relationship between quantum of various pesticides used, and other relevant variables and morbidity rates from related diseases;

(b) using command areas of major irrigation projects as units of analysis, analyzing health status variables against a variety of

relevant independent variables such as: income level of people, health care expenditure; health input variables (curative and preventive); educational status of people; etc.

The above formed the basis of a fruitful discussion on the various aspects and dimensions of policy analysis. In order to facilitate the comprehension of the process of policy analysis and its various phases, participants selected problems from their own country situation and worked through the process illustrating the type of information they would get, the variables included, the parameters they would use, and the argumentation for changing or modifying those aspects of policies which had a direct bearing on the problem chosen. In this way policy analysis was seen as an invaluable analytical tool for assessing health status which takes account of the socioeconomic and political context within which the health situation evolves, as well as a negotiating platform for protecting and promoting health status within development policies and programmes.

SPECIFIC RECOMMENDATIONS

The discussions following the presentation of each case aimed at identifying the underlying issues, policy options and key action research. Many of the issues were already known to policy makers, and some countries had already taken steps to introduce safeguards. The policy options therefore were put forward as general guidelines enabling each country to select those most appropriate to their stage of development in introducing safeguards for protecting health. The policy options were not mutually exclusive. The following is a summary of the key issues, policy options and action research required in each of the five areas discussed and recommended for countries, WHO and the international community.

Agricultural Development Policy and Health Status

A. *PESTICIDE USE - Key Issues*

1. The use of pesticides is necessary for improving yield of food crops, increasing farmers' income and protecting large investments in emerging commercial agriculture.

2. There is a growing need to minimize existing pesticide use and to make less toxic pesticides widely available at affordable prices.

Policy Options

(a) a special list of essential pesticides should be identified on the basis of the following criteria:
harmful effects;
cost-effectiveness;
efficacy;
operational convenience,

(b) legislative measures should be enacted or strengtened to control import, production and" distribution of pesticides, and to induce producers to invest in research and development of safer products;

(c) information, education and communication pro grammes should be undertaken for pesticide users and the general public. Agricultural extension workers, health workers, mass media, producers and suppliers should be involved. Focus should be given to adverse effects of pesticide use and safe handling methods in transportation and application of pesticides;

(d) use of safety measures and protective equipment should be ensured through appropriate pricing and distribution policy;

(e) community involvement and popular participation in surveillance and monitoring of the use of products and safety measures should be encouraged;

(f) intercountry cooperation and collaboration involving research institutions for monitoring and evaluation of the adverse effects of various pesticide products should be solicited. Dissemination of this information should be promoted;

(g) pesticide epidemiology and toxicology should be introduced in health curricula to increase the number health personnel who are able to analyse, prevent and cure health problems caused by use and abuse of pesticides;

(h) information on traditional pest control practices should be disseminated. the development of safe and ost-effective methods of pest control through research on alternative cropping patterns and bio-technology should be promoted. cooperation of relevant international research organizations in this regard should be solicited;

(i) the health ministry should be equipped with the required epidemiological skills to anticipate, inform and control the adverse effects of pesticide use on health.

Action Research Requirements

i. quantitative analysis of actual harmful effects of pesticides including residues in food and environment;

ii. substitutes for harmful pesticides;

iii. possibilities for reducing the cost of less harmful but more effective types of pesticides.

B. LARGE SCALE WATER DEVELOPMENT PROJECTS - Key Issues

1. Growing need for implementation of large scale water development projects for increasing the supply of food and energy.

2. Urgent need to mitigate adverse effects on health caused by changes in the environment.

Policy Options

(a) health impact analysis should become an essential part of the project appraisal process;

(b) the cost of control measures for the protection of the health status of relevant population groups should be included in the project budget;

(c) appropriate methods for surveillance and monitoring of health status, including early warning signs of emerging health hazards, should be developed and followed up during project implementation;

(d) local health workers should be trained to identify and treat emerging health problems, and the population should be made aware of the problems through the use of information, education and communica tion systems;

(e) health profiles of populations in the project area, both migrant and local, should be maintained for deriving appropriate health interventions;

(f) the formation of independent watchdog groups (social organizations, NGOs etc.) should be pro moted at the local level for assisting individuals to obtain compensations for displacements and health problems caused by the project.

Action Research Requirements

i. epidemiological studies of the affected area;

ii. probable diseases associated with the impounding of water in big reservoirs;

iii. baseline health profile of both migrant and local populations to establish morbidity patterns.

II. Industrialization Policy and Health Status

A. OCCUPATIONAL HEALTH - Key Issues

1. Need for industrialization for income and employment generation to enhance a faster rate of economic growth.

2. Need to minimize the negative impact of industrialization on health status.

3. Need to maximize safety of workers and populations.

Policy Options

(a) an objective assessment of the occupational health situation in both quantitative and qualitative terms should be done on a regular basis;

(b) relevant legislation should be reviewed on a regular basis and amended when necessary;

(c) regular inspection of factories for potential safety and health hazards should be carried out with close involvement of trade unions (or similar bodies);

(d) safety measures should be planned in different industrial situations according to whether they present-

i. highly hazardous;
ii. moderately hazardous;
iii. least-hazardous conditions;

(e) the involvement of social security organizations should be sought to ensure fair allocation of resources in support of the health of the workers and other people in the vicinity of the industries;

(f) greater use of trade unions (or similar bodies), mass media, workers training centers, schools, vocational institutions etc. to disseminate knowledge to employees regarding the causes and consequences of occupational health hazards. Innovative ways should be explored to make this knowledge available;

(g) more emphasis should be laid on preventive measures through control of the environment;

(h) education of health professionals should be oriented towards environmental and behavioural sciences to enable them to cope with the factors affecting the health status of the people;

(i) gaps in the existing infrastructure should be identified, and steps taken to rectify the deficiencies;

(j) industrial zones should be planned and developed for easy application of intervention and control measures, thus minimizing unplanned dispersion;

(k) employers should make adequate provisions for health insurance and health compensation to workers and their families;

(l) incentives (tax incentives, concessional premium, reduced tariffs on safety equipment etc.) should be given to industries having minimal incidence of health hazards/accidents.

Action Research Requirements

i. Knowledge, Attitude and Practice (KAP) studies of various related bodies such as labour organizations, trade unions, industrial management, etc;

ii. case studies (in greater detail) of selected hazardous industries;

iii. survey of the industries using "harmful" machinery, i.e., that might be either antiquated, or highly sophisticated and beyond the capacity of operators;

iv. case studies of successful and unsuccessful occupational health interventions in industries;

v. study of the cultural factors influencing human behaviour in industrialization to better understand the role these play in determining the situation;

vi. experimental study to investigate the best methods of disseminating information regarding the impacts of industrialization on health;

B. CHILD LABOUR - Key Issues

1. Child labour, while unacceptable, is widespread in many countries due to extreme poverty.

2. Need to protect and promote the health status and quality of life of working children by ensuring acceptable working conditions.

Policy Options

(a) the health status of children should be monitored in hazardous industries at regular intervals through epidemiological investigations;

(b) ministries of Health, Education, Labour and Social Welfare should be alerted to the health impacts of child labour;

(c) legislation on child labour should be extended and implemented effectively;

(d) available information should be disseminated to the parents and public regarding the impact of child labour on the physical and mental health of the children;

(e) provision should be made for longer rest periods, reduced working hours and educational and recrea tional facilities for working children;

(f) special measures should be adopted to reduce school dropouts for example through the creation of vocational training and the development of income generating activitie for families who are likely to send their children to work;

(g) development of primary health care, especially in the informal small scale industrial sector, as an effective approach for improving the health status of working children and their working environment.

Action Research Requirements

i. study on the net economic effect of working children on their family's income;

ii. nature of an educational programme (condensed module) which could be profitably adopted to provide educational facilities to working children;

iii. in depth study of the child labour situation in small scale industries.

III. Urbanization Policy, including Housing, and Health Status - Key Issues

1. The rapid increase in the urban population due to a variety of reasons such as rural-urban migration, expansion of the urban industrial sector and the natural growth of the urban population, is an inevitable fact of the development process.

2. Increasing shortage of urban housing and inadequate services and amenities have an adverse effect on the health status of urban populations.

3. Proliferation of slums in large urban settlements severely affect the health of the urban poor.

Policy Options

(a) the slum problem due to urbanization is a socio-economic problem and not merely a physical plan-- ning issue. Therefore, specific but comprehensive policies and programmes should be developed in order to prevent slums from being created;

(b) the above policies and programmes should be developed based on an intersectoral approach with emphasis on-

i. short term options -
- community participation/self help schemes;
- sites and services projects;
- urban community development.

ii. intermediate options
- adult education, vocational education and proper counselling on responsible living;
- social preparation and organization of the community; community incentive schemes such as soft loans and self help schemes;
- re-orientation of urban health care on the basis of the Primary Health Care approach.

iii. Long term options -
- industrial siting;
encouragement of infrastructure development by the private sector through special incentives (such as tax exemptions, subsidies, credit facilities, trade etc.).

The above options should be considered as an effort to avoid over-crowding in large cities and encourage development of smaller towns.

Action Research Requirements

i. a detailed survey of the urban housing situation with emphasis on estimating existing stock, quality, demand and affordability;

ii. a profile of urban inhabitants and their living conditions to determine the most vulnerable groups;

iii. development of simple, appropriate and adequate indicators for monitoring health status in slums through periodic community morbidity surveys and specific epidemiological investigations;

iv. detailed investigation of housing finance to provide information on types of resources available and their sustainability;

v. investigations of the roles of the private sector and voluntary organizations and their resources in slum improvement programmes;

vi. in-depth study of legislation to identify the constraints

and barriers to implementation and action;

vii. action research that investigates existing public health laws and regulations covering housing should be analyzed, with a view to assessing whether these are too restrictive for the poor and impossible for them to achieve. Tests should be carried out to ascertain the effect of these laws and regulations on the poor's initiatives regarding their own housing;

viii. study of health effects of housing with special reference to the effects of overcrowding as a result of shortage of housing;

ix. the effect that certain primary health care schemes would have on the "health quality" of the slum, i.e., from the standpoint of personal, communal health improvements, to the total environment of the slum;

x. detailed study to enable spatial planning for a viable hierarchical system of human settlements (including the growth centers/points and satellite towns);

xi. the effect of income-generating activities, self-help schemes, and encouraged-entrepreneurship through the use of seed money should be investigated.

SPECIFIC RECOMMENDATIONS FOR WHO AND OTHER INTERNATIONAL ORGANIZATIONS

1. To set up an interdisciplinary scientific group at regional level to advise and support WHO and countries on:

   (a) the implementation of recommendations related to health in public policy, emanating from the regional and global levels;

   (b) the production of documents and publications on themes related to health in public policy for advocacy purposes;

   (c) the involvement of policy makers and representatives of bilateral and other funding agencies on issues of concern to the countries of the region through round-table negotiations and discussions.

2. WHO should support the development of a network of institutions which could undertake training activities, research studies, information gathering and documentation on issues in the area of public policy as identified above, especially regarding the issues of health status protection and promotion in agricultural development, industrialization policy, urbanization policy including housing, as well as the development and dissemination of methodologies that could be used for health impact analysis during project formulation.

3. WHO and the ILO should liaise with the countries and relevant labour organizations to strengthen and

support mechanisms that develop safety measures.

4. WHO, in collaboration with relevant UN Organizations and other agencies, should intensify its support to member countries for implementing the general and specific recommendations and in their efforts to mobilize resources for strengthening appropriate national institutions for the implementation of the above.

OVERALL RECOMMENDATIONS

The following overall recommendations were adopted by the Symposium.

Recognition should be given to development policies in non-health sectors as they have wide ranging implications for, and impact on health status and quality of life.

Health impact analyses are a valuable component for feasibility and appraisal studies, the results of which can be used to eliminate or reduce adverse effects of development programmes and projects.

In view of the World Health Assembly Resolution WHA 39.22 and the recommendations of the South-East Asia Regional Conference on Health Development, this Symposium recommends that action be taken by the countries, WHO and other international agencies to:

1. Advocate, sensitize and create awareness among policy and decision makers, administrators, health and other professional groups and NGOs on the health implications of development policies and projects by holding symposia, seminars and workshops at appropriate levels in the countries and in the region.

2. Promote and carry out health impact analyses with regard to development policies and programmes relevant to specific country situations.

3. Support and encourage institutions to undertake the training of development planners, senior management personnel and researchers to augment their skills in the analysis of the

implications of development policies and projects on health status.

4. Select institutions to commence action research in collaboration with local experts and other concerned agencies on relevant, identified themes.

5. Promote the exchange of information and experiences amongst health planners, policy analysts and programme managers through the organization of study tours and meetings both within and outside countries.

6. Strengthen the existing research institutions and mechanisms to undertake research studies to identify and analyze areas and issues of vital concern to health status in development policies and projects (at least one issue per year).

7. Use these studies as the technical basis of meetings held with relevant agencies, and publish and disseminate results of studies and meetings.

8. Strengthen the infrastructure in the countries of the Southeast Asian region to collect, analyze and document information on a regular basis, and facilitate decision-making on issues related to the implications of development policies on health status.

ANNEXES

A. List of Participants

B. Programme of Work

C. Bibliography

D. Method of Work

ANNEX A.

LIST OF PARTICIPANTS

Dr Mahboob Hussain
Director-General
Bangladesh Institute of Development Studies
Dhaka, Bangladesh

Dr S.Y. Anayat
Director
Health Division
Ministry of Social Services
Bhutan

Mr R.P. Kapoor
Director-General
National Institute of Rural Development
Hyderabad, India

Mr R. Srinivasan
Secretary
Ministry of Health and Family Welfare
Government of India
New Delhi, India

Dr Widyastuti Wibisana
Director
Community Participation
Ministry of Health
Jakarta, Indonesia

Dr S.-L. Leimena
Director-General
Community Participation
Ministry of Health
Jakarta, Indonesia

Dr M. Alwi Dahlan
Assistant to Minister of Population and Environment
Jakarta, Indonesia

Dr U. Myint Thein
Director
Department of Health
Yangon, Myanmar

Dr U. Thet Lwin
Lecturer
Statistics Department
Institute of Economics
Yangon, Myanmar

Mr Subarna Jung Rana
Additional Health Secretary
Ministry of Health
His Majesty's Government of Nepal
Kathmandu, Nepal

Dr B.D. Chataut
Chief of Policy, Planning, Monitoring
and Supervision Division
Ministry of Health
His Majesty's Government of Nepal
Kathmandu, Nepal

Ms Padma Mathema
Assistant Secretary
Chief-Social Service Division
National Planning Commission
Singh Durbar
Kathmandu, Nepal

Ms K.C. Gauri
Member-Secretary
Health Service Coordination Committee
Social Service National Coordination Council
Lainchaur, Nepal

Dr Godfrey Gunatilleke
Executive Vice Chairman
Marga Institute
Sri Lanka Center for Development Studies
Colombo, Sri Lanka

Dr E. Rajanathan
Deputy Director-General
Public Health Services
Colombo, Sri Lanka

Dr P.M.B. Cyril
Minister of State for Health
Democratic Socialist Republic of Sri Lanka
Colombo, Sri Lanka

Mr Narong Nitayaphorn
Director
Social Project Division
NESDB
Bangkok, Thailand

Mr Panya Rangsipiphat
Planning and Policy Analyst
Division of Rural Development
NSEDB
Bangkok, Thailand

Dr Supasit Pannarunothai
Head, Planning and Project Section
Provincial Hospital Division
Ministry of Public Health
Bangkok, Thailand

Dr Pricha Deesawasdi
Deputy Permanent Secretary
Ministry of Public Health
Bangkok, Thailand

WORLD HEALTH ORGANIZATION

Dr A. El Bindari Hammad
Responsible Officer
Intersectoral Action for Health
WHO Headquarters
Geneva, Switzerland

Dr Uton M. Rafei
Director
Health Systems Infrastructure
WHO Regional Office for South-East Asia (WHO/SEARO)
New Delhi

Dr Sonja Roesma
Regional Adviser - Primary Health Care
WHO Regional Office for South-East Asia (WHO/SEARO)
New Delhi

Dr Palitha Abeykoon
Medical Officer - Medical Education
WHO Regional Office for South-East Asia (WHO/SEARO)
New Delhi

Professor U.M. Malla
Temporary Adviser to the Regional Director
New Delhi

INDIAN INSTITUTE OF MANAGEMENT

Dr Basu Ghosh
Professor of Health Services Management
Faculty Leader

Dr Jagdish C. Bhatia
Professor of Health Services Management

Dr Ranajit Dhar
Professor of Economics

Dr Shyamal Roy
Professor of Agricultural Economics

Dr Vinod K. Tewari
Professor of Human Settlements Studies

OBSERVER
Dr Iain Aitken
School of Public Health
Harvard University
USA

ANNEX B

METHOD OF WORK

The Symposium was conducted using a well structured programme with a participatory approach. To facilitate in-depth analysis and initiate discussion two small groups were formed to discuss specific cases. The groups included at least one country participant. These groups analyzed the modules thoroughly and reported back in plenary sessions. During the plenary sessions all the participants had a chance to share their views and come to some consensus.

The areas of public policy and their impact on health status and quality of life were presented in three modules. These were:

(a) Agricultural development policies;

(b) Industrialization policies;

(c) Urbanization policies.

For each of these 3 modules illustrative examples from actual situations were documented as described below.

Module I. Agricultural Development Policy - Health Linkage

(a) Case on Pesticide use

(b) Case on the Narmada Valley Project

(c) Background Note on "Issues in Agricultural Health Linkages"

Module II. Industrialization Policy - Health Linkage

(a) Case on Occupational Health Hazards and Safety in Industries

(b) Case on Child Labour

(c) Background Note on "Industrialization Policy and Health"

Module III. Urbanization Policy - Health Linkage

(a) Case on Housing in Urban Areas

(b) Case on Slums

(c) Background Note on Urbanization, Urban Policies and Health Implications

A set of study questions was used to help the participants to focus on concrete issues and, as decision makers, select the course of action to be taken by weighing the advantages and disadvantages of various policy options.

ANNEX C

BIBLIOGRAPHY

Dr Basu Ghosh, Methodologies for Policy Analysis on Intersectoral Action in Support of Health and Qualtiy of Life. Unpublished background document. Indian Institute of Management, Bangalore, October 1989.

Dr P.G.K. Panikar, The Adverse Effects of Development Programmes on Health - Irrigation Projects on Malaria. Unpublished background document. Bangalore, October 1989.

Dr Aung Tun Thet, Health Impacts of Development Policies: A Case Study of Sedawgyi Multipurpose Dam and Irrigation Project in Myanmar. WHO South East Regional Office, October 1989.

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ANNEX D

PROGRAMME OF WORK

WEDNESDAY 18 OCTOBER 1989

08.30 - 09.00	REGISTRATION
09.00 - 10.00	INAUGURATION

1. Welcome address presented by Dr Uton M. Rafei, HSI/SEARO
2. Remarks by Dr Aleya El Bindari Hammad, ISC/WHO HQ
3. Introduction to the Symposium - Objectives and Methods by Prof. Basu Ghosh, IIM
4. Address by the Chairperson - Prof. J. Philip, Director, IIM
5. Inaugural address by Chief Guest - Mr A.B. Datar, Former Chief Secretary, Karnataka
6. Vote of Thanks by Dr Sonja Roesma, WHO/SEARO

10.00 - 10.30	Coffee Break
10.30 - 10.45	Appointment of Chairperson and

	Rapporteurs
10.45 - 11.00	Introduction to Module I by Prof. Shyamal Roy, IIM
11.00 - 11.30	Individual Case Reading
11.30 - 13.00	Small Group Work on Module I
13.00 - 14.00	Lunch Break
14.00 - 15.00	Small group work on Module I (continued)
15.00 - 15.30	Plenary Case Discussion on Module I
15.30 - 15.45	Coffee Break
15.45 - 16.45	Plenary Exchange of country experiences
17.15 - 17.37	Summary of Module I by Rapporteur Prof. Jagdish C. Bhatia, IIM

THURSDAY, 19 OCTOBER 1989

09.00 - 09.15	Introduction to Module II by Prof. Ranajit Dhar, IIM
09.15 - 10.45	Small group work on Module II
10.45 - 11.00	Coffee Break
11.00 - 13.00	Small group work on Module II (contd.)
13.00 - 14.00	Lunch Break

14.00 - 15.30	Plenary Case discussion on Module II Coffee Break
15.45 - 16.15	Plenary Exchange of Country Experiences
16.15 - 16.30	Summary of Module II by Rapporteur Prof. Basu Ghosh, IIM

FRIDAY, 20 OCTOBER 1989

09.00 - 09.15	Introduction to Module III by Prof. Vinod K. Tewari, IIM
09.15 - 10.45	Small group work on Module III
10.45 - 11.00	Coffee Break
09.15 - 10.45	Small group work on Module III (contd.)
13.00 - 14.00	Lunch Break
14.00 - 15.30	Plenary Case discussion on Module III
15.30 - 15.45	Coffee Break
15.45 - 16.15	Plenary Exchange of country experiences
16.15 - 16.30	Summary of Module III by Rapporteur Prof Basu Ghosh, IIM

SATURDAY, 21 OCTOBER 1989

09.00 - 09.30	Session Objectives Methodologies for policy analysis Introduction by Dr A. El Bindari Hammad WHO/HQ
09.30 - 11.00	Discussions
11.00 - 11.15	Coffee Break
11.15 - 13.00	Discussions
13.00 - 14.00	Lunch Break
14.00 - 15.30	Small group work on methodology for policy analysis
15.30 - 15.45	Coffee Break
15.45 - 16.30	Presentation of methodologies for policy analysis in individual countries

SUNDAY, 22 OCTOBER 1989

FIELD TRIP

MONDAY, 23 OCTOBER 1989

09.00 - 10.45	Plenary Presentation of country group reports and discussion

10.45 - 11.00	Coffee Break
11.00 - 13.00	Plenary Presentation of country/group reports and discussion
13.00 - 14.00	Lunch Break
14.00 - 15.30	Plenary
15.45 - 17.00	Plenary

TUESDAY, 24 OCTOBER 1989

11.30 - 12.00 Opening Session

1. Introductory Address by Prof. J. Philip, Director IIM

2. Welcome Address by Dr D.B. Bisht Director, Programme Management WHO/SEARO

3. Remarks by Dr A. El Bindari Hammad, ISC/WHO HQ

4. Inaugural address by H.E. Shri P. Ventakasubbiah, Governor of the State of Karnataka

5. Vote of Thanks by Prof. Basu Ghosh, IIM

12.30 - 14.00 Lunch Break

14.00 - 15.45	Plenary Presentation of policy options on Agriculture vis a vis health. Discussions
15.45 - 16.00	Coffee Break
16.00 - 17.15	Discussion continued

WEDNESDAY, 25 OCTOBER 1989

09.00 - 10.45	Plenary Presentation of Policy options on industrialization vis a vis health. Discussions
10.45 - 11.00	Coffee Break
11.00 - 13.00	Discussion continued
13.00 - 14.00	Lunch Break
14.00 - 16.00	Plenary Presentation of policy options on Urbanization vis-à-vis Health. Discussion
16.00 - 17.00	Visit to the Institute for Tea

THURSDAY, 26 OCTOBER 1989

09.30 - 10.45	Discussion on Final report
10.45 - 11.00	Coffee Break Adoption of the final report. Discussion
1100	Closure of the Symposium

This document attempts to analyze the impact of development policies on health and quality of life by looking at specific aspects of urbanization, industrialization and agricultural development.

It represents the collective views of policy and decision makers, administrative, health and other professionals including NGOs, on ways and means of reducing health risk factors in the context of ongoing economic policies and programs. As such it represents a useful document which can be used as a guideline for future policy options and action research.