THE CHINA COUNCIL FOR INTERNATIONAL COOPERATION ON ENVIRONMENT AND DEVELOPMENT

THE FOURTH MEETING OF PHASE II

Shangri-La Hotel, Beijing
31 October – 2 November 2000

SUMMARY RECORD

CCICED Secretariat Canadian Office
November 2000
# TABLE OF CONTENTS

## I. INTRODUCTION

1

## II. AGENDA ITEMS

1. **APPROVAL OF NEW COUNCIL MEMBERS AND WG CO-CHAIRS**

2. **ADOPTION OF THE AGENDA**

3. **OPENING CEREMONY**

4. **GENERAL DEBATE ON CHINA’S WESTERN DEVELOPMENT STRATEGY**

5. **REPORT ON THE WORK AND FINANCES OF THE SECRETARIAT**

6. **REPORTS BY THE WORKING GROUPS**
   a) *Forests and Grasslands Task Force*
   b) *Coordination of the Working Groups*
   c) *Energy Strategies and Technologies*
   d) *Sustainable Agriculture*
   e) *Cleaner Production*
   f) *Pollution Control*
   g) *Biodiversity*
   h) *Trade and Environment*
   i) *Environmental Economics*
   j) *Transportation*
   k) *Economic Planning and Environmental Protection*

7. **DISCUSSION AND APPROVAL OF THE RECOMMENDATIONS**

8. **CLOSING CEREMONY**

## III. RECOMMENDATIONS TO THE CHINESE GOVERNMENT ON THE W.D.S.

278

## IV. GENERAL RECOMMENDATIONS OF THE COUNCIL TO PREMIER ZHU RONGJI

279

## V. MEETING WITH PREMIER ZHU RONGJI

280
### ABBREVIATIONS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADB</td>
<td>Asian Development Bank</td>
</tr>
<tr>
<td>AGM</td>
<td>Annual General Meeting</td>
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<tr>
<td>CDM</td>
<td>Clean Development Mechanism</td>
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<td>CIDA</td>
<td>Canadian International Development Agency</td>
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<td>COP-6</td>
<td>6th Conference of the Parties to the United Nations Framework Convention on Climate Change</td>
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<td>EIA</td>
<td>Environmental Impact Assessment</td>
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<td>EPB</td>
<td>Environment Protection Bureau</td>
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<td>EU</td>
<td>European Union</td>
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<td>FYP</td>
<td>Five-Year Plan</td>
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<td>GDP</td>
<td>Gross Domestic Product</td>
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<td>GMO</td>
<td>Genetically Modified Organism</td>
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<td>GNP</td>
<td>Gross National Product</td>
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<td>GoC</td>
<td>Government of China</td>
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<td>IMAR</td>
<td>Inner Mongolia Autonomous Region</td>
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<td>IPM</td>
<td>Integrated Pest Management</td>
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<td>ISO</td>
<td>International Standards Organization</td>
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<td>IUCN</td>
<td>The World Conservation Union</td>
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<td>MAI</td>
<td>Multilateral Agreement on Investment</td>
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<td>MOFTEC</td>
<td>Ministry of Foreign Trade and Economic Cooperation</td>
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<td>NPC</td>
<td>National People’s Congress</td>
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<td>ODA</td>
<td>Overseas Development Assistance</td>
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<td>RPS</td>
<td>Renewable Petrolia Standards</td>
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<td>SDPC</td>
<td>State Development and Planning Commission</td>
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<td>SEPA</td>
<td>State Environmental Protection Administration</td>
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<td>SETC</td>
<td>State Economic and Trade Commission</td>
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<td>SIDA</td>
<td>Swedish International Development Agency</td>
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<td>SME</td>
<td>Small and Medium Enterprise</td>
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<td>UK</td>
<td>United Kingdom</td>
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<td>UNDP</td>
<td>United Nations Development Programme</td>
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<td>UNEP</td>
<td>United Nations Environment Programme</td>
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<td>WBC</td>
<td>World Business Council</td>
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<td>WDS</td>
<td>Western Development Strategy</td>
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<td>WG</td>
<td>Working Group</td>
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<td>WTO</td>
<td>World Trade Organization</td>
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<td>WWF</td>
<td>World Wide Fund for Nature</td>
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I. INTRODUCTION

1. The China Council for International Cooperation on Environment and Development ("the Council") was established by the State Council of the Chinese Government in April 1992 to facilitate cooperation between China and the international community in the fields of environment and development.

2. The Council is a high-level advisory body that makes proposals for consideration by the Chinese Government on the integration of environment and development. It has so far held five annual meetings in Phase I and four annual meetings in Phase II. It will meet once again in the fall of 2001, concluding Phase II. The Council assists in developing an integrated, coherent approach to environment and development and it encourages systematic cooperation between China and other countries. The Council also seeks to demonstrate its recommendations through pilot projects.

3. The Council is a non-governmental body but with strong government involvement. Currently the Council comprises 25 Chinese Members and 28 International Members, all chosen for their expert knowledge and their experience.

4. The Members of the Council attended the 4th Meeting of Phase II at the invitation of Wen Jiabao, Vice-Premier of China’s State Council and Chairman of the Council.

5. The host institution was the State Environmental Protection Administration (SEPA). SEPA has been made responsible for inter-ministerial coordination and for supporting the activities of the Council. It has established a Secretariat to maintain and develop international and domestic contacts and to ensure follow-up within China to the suggestions made by the Council, as well as to deal with the routine work of the Council when it is not in session. The Secretariat is assisted by its Canadian Office, which is directed by Prof. Earl Drake, is located at Simon Fraser University in Vancouver and is funded by CIDA.

6. This Summary Record of the Council’s 4th Meeting of Phase II was prepared for the Secretariat Canadian Office by Ms. Lucie McNeill on the basis of more detailed notes recorded during the Meeting. The Summary Record represents the Canadian Office’s interpretation of the discussions and not necessarily the views of all the participants. To ensure frank and direct exchanges, it has been agreed that the Summary Record of the Meeting should present an overview of the discussions without attribution to individual speakers.
II. AGENDA ITEMS

ITEM 1. APPROVAL OF NEW COUNCIL MEMBERS AND NEW WG CO-CHAIRS

7. A number of new Chinese and international Council members and WG Co-Chairs were acclaimed.

ITEM 2. ADOPTION OF THE AGENDA

8. With Chairman Wen Jiabao presiding as chair, the agenda for the 4th Meeting of Phase II was accepted as presented.

ITEM 3. OPENING CEREMONY

9. With Chairman Wen Jiabao presiding as Chair, the following participants made statements to mark the opening of the Meeting:

1) Council Chair Wen Jiabao, Vice Premier of China’s State Council
2) Vice-Chair Leonard Good, President of Canadian International Development Agency
3) Vice-Chair Qu Geping, Chair of the Environmental Protection and Natural Resource Conservation Committee, NPC
4) Vice-Chair Liu Jiang, Vice-Chair of SDPC
5) Vice-Chair Xie Zhenhua, Minister of SEPA

10. In the course of these remarks, the following points were made:

11. The 4th Meeting of Phase II is taking place at the conclusion of the 9th Five-Year Plan (FYP), a period which has seen annual GDP growth in excess of 8%, as well as great progress on the environmental front. Investment in environmental protection and ecological construction has increased by a factor of 1.75 over the 8th FYP, while total pollutant discharge has decreased by 15%. The Communist Party Central Committee has issued its recommendations for the 10th FYP and has directed the government to focus on socio-economic development.

12. The development of China’s western regions is a key strategy for the coming century. Sustainable development, and learning from lessons learned in China and abroad, will guide this project. The economy will not be developed at the expense of the environment. The accent will be put on the protection of natural forests and grasslands in the Yellow and Yangtze river basins. The accent will be put on the prevention of environmental damage rather than treatment when initiating development projects. Major infrastructure investments will be made to transport natural resources – particularly natural gas and electricity – from western to eastern China in order to reduce air pollution there.

13. CIDA commissioned a self-assessment of the CCICED during the past year; the report is now available. Its purpose was to assess and document the results achieved by the Council over the past eight years. The report reveals a consensus that the Council should
continue to operate after Phase II concludes, although some relatively small changes are recommended to improve the effectiveness of the Council. Canada therefore intends to make a third five-year contribution to the Council, if the decision is made to continue into Phase III. A concept paper on this will be prepared by the Secretariat for discussion at the next AGM of the Council. It is hoped that multi-year pledges will be instituted by donors in order to improve the Council’s ability to plan its programs and activities.

14. In developing its western regions, it is hoped that China will avoid errors committed by other countries, such as Canada, where development of the hinterland was done at the expense of the environment. Equitable development for outlying regions is still studied and debated.

15. China needs to think about the legal framework necessary to promote sustainable development and environmental protection. China has made great progress in building a socialist market economy. This process will accelerate with accession to the WTO. The first steps towards environmental legislation were taken by China at the outset of the economic reforms, in the late ‘70s. Further progress will be made in the integration of sustainable development principles into all levels of economic decision-making, in the improvement of existing environmental laws and regulations, and in the promotion of laws that ensure China’s adherence to international covenants and treaties. This legislative framework will comprise of laws, economic incentives and disincentives, voluntary stakeholder participation and enforcement, and public participation and supervision. The NPC is presently amending key environmental laws, such as the Air Pollution Prevention Law. The Cleaner Production Law and the Environmental Impact Assessment Law.

16. China’s present emphasis on the Western Development Strategy (WDS) aims to promote economic growth, ethnic solidarity, social stability and reduce regional inequality. Emphasis will be placed on ecological construction, since China’s major rivers originate on the Tibetan plateau. Presently, 80% of all soil erosion in China takes place in the western regions. Degradation of ecosystems in the western regions can only lead to a slow-down in economic growth and increased difficulties in implementing the government’s poverty reduction programs. Given that the present environmental degradation in the western regions happened over the past few decades, it is expected reversing the damage will also take time. Technical assistance and advice provided by the Council are of key importance in this process.

17. Since the Council’s last AGM, China has continued to make progress. 90% of China’s enterprises are now meeting emissions standards. Cleaner production and ISO 14000 certification have been further promoted. Water quality along some of China’s most polluted rivers has improved. Some cities are increasing their use of clean energy sources. During the 9th FYP, China spent 0.97% of its GDP on ecological construction and environmental protection, compared to 0.24% during the 8th FYP. China is also increasing its use of economic instruments such as green taxation to achieve environmental targets.

18. During the 10th FYP, China’s population will continue to grow, while urbanization and industrialization will speed up and economic growth will continue apace. This will make it more difficult to combat environmental damage. As the population’s standard of living increases, the public is requesting better quality of life, including a cleaner environment to live in. The WDS will also present a real challenge for environmental protection, which is why China is emphasizing integrated economic and environmental planning. Ecological surveys of the western regions will provide the baseline information needed to make sustainable development decisions.
ITEM 4. GENERAL DEBATE ON THE WESTERN DEVELOPMENT STRATEGY

19. Chairman Wen Jiabao presided over the Council’s General Debate on China’s Western Development Strategy (WDS). Proceedings were initiated by a presentation from the State Council’s Office for Western Development, wherein the following points were made:

20. The thrust behind the WDS is the existing gap between the relatively developed coastal areas and the more backward western inland areas. Given the growth enjoyed by China over the past two decades, investing in regional development has now become possible. In addition, the rich natural resources of the western regions (mineral deposits, hydro-electric potential, oil and gas, etc.) and low labour costs are making the area more attractive to domestic investors. However in order to promote this development, the national government must invest in infrastructure development, primarily transportation (highways, railways, pipelines and civil aviation). A focus of infrastructure investment is water conservancy (for flood control as well as irrigation and urban water supply), including projects such as dams, dikes and water diversion works.

21. During implementation of the WDS, attention will be paid to ecological construction and environmental protection. This includes enforcing a logging ban in parts of the Yangtze and Yellow River watersheds, reforestation and restoration of natural vegetation on sloped land, combating desertification and the establishment of nature reserves and green belts. Agriculture will focus on high-yield crops that are better adapted to arid and semi-arid conditions. Post harvest storage and processing will be promoted in order to increase the value of the region’s farm output. Western development will rely to a great extent on the propagation of science and technology, therefore emphasizing the importance of education.

22. In order to promote the implementation of the WDS, the central government will increase its own budget expenditures on infrastructure construction in the western regions. In addition, the government will institute preferential policies to encourage the flow of investment – both domestic and foreign - to the west. Preferential policies will also be implemented to encourage the migration of highly skilled personnel to western regions. Investment in science and technology research in the western regions will also be increased. The central government will increase its contribution to basic and post-secondary education in western regions.

23. With Council Vice-Chair Qu Goping presiding, presentations on the WDS were made by the Vice-ministers for the Ministries of Land and Resources, Communications, Water Resources, SEPA and the State Forestry Administration. During these presentations, the following points were made:

24. The Ministry of Science and Technology is drawing up a master plan on the development of science and technology in western China. This master plan is to be based on the principles of sustainable development, on local specificity of eco-systems, and on a survey of present conditions. Prior to implementing this master plan, demonstration projects will be conducted to showcase the technologies and processes promoted. Given the general shortage of water in western China, using science and technology to promote water conservation is key to the WDS. Industries such as eco-tourism, the production of organic foods and medicinal plants and so on - which are compatible with the fragile environment and in some cases lead to the restoration of degraded or desertified areas - will be further promoted. In order to apply scientific and technological advances in the implementation of the WDS, investment in
capacity building will be necessary, with planned investment by the central government in research and education facilities and institutions.

25. The Ministry of Land and Resources is advocating the development of a “green” mining industry in order to further develop western China. The western regions have abundant reserves of valuable minerals which so far have barely been tapped. Of key concern at present is the extensive model used in the development of mineral deposits, leading to waste, damage to vegetation and soil erosion; rarely are funds set aside for restoration or reclamation work once the mining operation closes. The “green mining” strategy advocated involves: using environmental impact assessment prior to development in order to set guidelines for the mine operation; minimizing the disturbance through the use of best available technology; restoring and rehabilitating the environment at the end of the mine’s life. China has already achieved some success in following these strategies, with some of the more recent mining operations achieving minimal tailings discharges. The legal framework regulating the mining industry needs to be improved in order to promote “green” mining. In addition, special funds should be set aside to promote environmental protection and ecological restoration.

26. The Ministry of Communications is focusing part of its attention to the construction of an effective highway network linking western China to the rest of the country. The Ministry has drawn up a transportation master plan involving the construction of a series of national trunk highways, of inter-provincial roads and of local roads to be completed by 2010. The Ministry recognizes the broad range of adverse environmental impacts caused by both road construction and the existence of highways. In the context of the WDS, and given the very fragile environment in which road construction will take place, the Ministry will include an environment protection plan in each project; will adopt highway designs that minimize environmental impact; will strengthen supervision of highway construction sites to enforce environmental regulations; will focus on post-project vegetation reclamation; and continue to do research on appropriate highway design and construction.

27. The Ministry of Water Resources recognizes that soil erosion and poor water conservation are key problems to be addressed in the context of the WDS. Soil erosion is leading to a decrease in precious arable land and is clearly linked to poverty in western regions. Soil erosion is leading to desertification and to heavy sediment loads in the Yellow and Yangtze rivers. Several factors have contributed to erosion, including overgrazing, logging, terracing and construction. China has a rich experience in soil and water conservation. China is also a signatory to the United Nations Convention to Combat Desertification. The Ministry is strengthening its efforts to manage land use in watersheds, increasing public participation in the process and introducing contract-based reforestation and grassland seeding. During the implementation of the WDS and the ensuing construction projects, supervision will be needed to prevent further degradation. The policy of taking marginal slope lands out of farming and restoring them to natural vegetation will continue. Several water conservation, reforestation and anti-desertification projects will be financed as part of the WDS. Plans will also be drawn to promote more rational water utilization and conservation in western regions.

28. SEPA has been mapping China’s strategy for environmental protection in the context of the 10th FYP as well as the WDS. Environmental tasks assigned SEPA during the 9th FYP have been completed, with targets reached for effluent discharges and environment regulations compliance on the part of industry. A national Ecological Environmental Construction Plan has been ratified by the State Council. National Ecological Environmental Protection Guidelines are being formulated. Serious problems persist and some – such as the
increased non-point source pollution in agriculture and reduction of biodiversity – are becoming more serious. During the 10th FYP, SEPA will focus on: water pollution prevention in the Huai, Liao and Hai river basins; controlling acid rain and SO2 in identified zones; improving Beijing’s environment; controlling pollution in the Bohai Sea. In addition, the Three Gorges Reservoir and the Xiaolangdi Reservoir will be decreed key regions for environmental protection. In the context of the WDS, SEPA will promote basic principles for sustainable development, including prevention of ecological degradation and conservation of resources, as well as the integration of environmental protection in all economic development plans.

29. The State Forestry Administration has a major role to play in environmental conservation and ecological construction, which includes reforestation, restoration of grasslands and anti-desertification campaigns. China is now combining this work with poverty eradication, in that peasants living in marginal farming areas are now being paid to carry out conservation work. This has been carried out on a trial basis during the past year in some 175 counties located in 13 provinces. The areas involved are to increase next year. Farmers recruited for the work are given grain for labour as well as cash subsidies. Payment of both cash and grain is contingent upon the quality of the plantings. The logging ban in parts of the Yangtze and Yellow river watersheds is being enforced, with wood production from that area down 70% by the end of the year.

30. With Vice-chair Leonard Good presiding, presentations were made to Council from the vice-governors of Sichuan, Gansu and Inner Mongolia. During the presentations, the following issues were raised:

31. Sichuan is included in the WDS because it is populous and still relatively undeveloped. It is important also for its rich biodiversity and because nearly all its territory is part of the Yangtze River watershed. It is a fairly vulnerable environment with serious soil erosion problems. A logging ban is now in effect, and the government is implementing the land use conversion policy of the central government, whereby marginal farmland is being converted back to natural vegetation. Natural and aerial seeding techniques are being used; tree nurseries have been developed to meet the demand for seed and seedlings.

32. Gansu province has varied geo-climatic conditions, from the arid semi-desertic Hexi corridor, to the Loess Plateau, to the grasslands approaching the Tibetan Plateau. Sections of the Yellow and Yangtze river watersheds are in Gansu. Over the past few years, major efforts have been made in afforestation and restoration of natural vegetation cover. This has been coupled with extensive water conservation measures. Gansu’s capital, Lanzhou, has severe air pollution problems and increasing efforts have been made to control them. For Gansu, the WDS is an opportunity to continue state-owned enterprise (SOE) reform, while promoting investment and increasing ecological construction activities.

33. The Inner Mongolia Autonomous Region (IMAR) is home to five deserts, extensive grasslands and forests. Some of the desert areas are now threatening the “Three-North Shelter Belt” that was to protect Beijing from annual sandstorms. IMAR is experiencing severe water conservation and soil erosion problems, despite repeated efforts to stabilize sand dunes and establish desert-tolerant plantations. Part of the IMAR strategy is to convert extensive agriculture and animal husbandry to more intensive models, cutting down on rangeland degradation. In the context of the WDS, IMAR is implementing a program comprising forest conservation, logging bans, afforestation, restoration of natural vegetation, water conservation, low-till agriculture and feedlot animal husbandry. International donors are involved with some of these projects.
34. A discussion of the presentations was chaired by Council vice-chair Leonard Good. The following views on the WDS were expressed by Council members:

35. It is inspiring to hear China address concurrently the issues of economic development, social issues and environmental protection. In order to spread widely some of the good pilot practices, it is important to marry high technology, policy development and public education. A useful model of land use could replicate a practice followed in a project in India, called the Bio-Village Model, where rural areas are divided into conservation, restoration and intensified use lands, using the latest technologies and the best traditional knowledge.

36. In the context of China’s efforts to develop further the production of medicinal plants that have high economic value while being well adapted to arid conditions, China should think of establishing genetic gardens of perennial plants in the vulnerable areas of western regions. These genetic gardens could contain both introduced and indigenous food and medicinal plant varieties. Some of these plants may be found in the future to have high commercial pharmacological value. Key is to recognize the importance of integrating ecological security of an area with the economic livelihood security of its residents.

37. As population increases in western regions, especially the urban population, it is important to emphasize integrated town and land use planning. The planned communities should be of human scale, allowing people to relate to each other, and where cultural diversity is cherished. Right scale settlements allow for the conservation of cultural diversity. The only way to keep areas for conservation is to give local people a solid profitable interest for looking after them.

38. Regarding transport policy in the western regions, not too much emphasis should be placed on road systems. China needs efficient railways to carry people and freight; this is less damaging to the environment than highways. Europe is currently cutting its road program and boosting its rail investment.

39. In the context of the WDS, ecology is directly related to meteorology. Ecological construction projects must take into account a region’s climatic variables. This is key in selecting the varieties of plants, shrubs and trees that will be planted. In western regions, water is scarce, but there is still enough water resources in the atmosphere to consider artificial cloud seeding, thus increasing precipitation.

40. The WDS is impressive, but who will coordinate and integrate all these excellent programs, given the number of ministries and levels of government involved? In order for the WDS efforts to bear fruit, SEPA should fulfill the role of coordination, horizontally and vertically. But the ministry must have the capacity to fulfill this role. In addition, while formulating a program is key, implementation and monitoring are equally important. SEPA should be given the mandate, as well as the budget and the staff, to do this work.

41. For the WDS to succeed, the local population must embrace its vision and objectives as well. Participatory approaches should be adopted in order to ensure popular ownership of the strategy. Only when people are convinced that they can be richer by being greener will they embrace sustainable development.

42. Medium-sized cities and industrialization will have to take place in order to avoid out-migration to the coastal regions. This will require investments in infrastructure and job
growth outside of agriculture. At the COP-6 meetings in the Netherlands, clean development mechanisms (CDM) may be agreed upon, allowing China to get credit for its land use changes from agriculture to forests and grasslands. There are also chances that renewable energies and clean coal technologies may also be included in this process.

43. China needs to look at the demand side for water, not just the supply side. In eight of Africa’s big cities, a study revealed that 50% of the water supply was wasted through leakage, evaporation and others. Working on the demand side would mean designing programs for recycling, increased efficiency of water use – especially with respect to irrigation in agriculture, but also in industry and involving cleaner production technologies. The fight against desertification should become a common one, involving binding instruments such as the UN Convention to Fight Desertification. A conference will be held in late November in The Hague on desertification, and this conference is important for China.

44. On cleaner production, it should be made clear that EIAs should not be linked only to project-level evaluation procedures, but should be required for programs and on a broader basis such as for human settlement and watershed management plans. UNEP is acting as a clearing-house for information on cleaner production – something which is at the disposal of users in China. As economies are entering investment phases, such as western China’s, they are in a very good position to integrate cleaner technologies – technologies that can make industries more competitive globally.

45. The WDS should be seen from a human perspective, focusing on poverty reduction and equity of distribution of the benefits of development. Western China is where 70% of the country’s poor live. China has a tradition to help the poor and to narrow disparities and inequities. The integrated approach advocated at the Council is critical for this project to succeed. It is also important to look at sectors from a human needs perspective. For energy, it means looking at services needed (such as heating, light, transportation) instead of energy supplies. In the western regions, 50 million people don’t have electricity. Costs to allow these people to access the existing grid are prohibitive. The key is to seek win-win solutions which are sustainable, reduce poverty and are environmentally sound. It is important to tax negative externalities and remove perverse subsidies. Focusing on supplying energy services to meet needs, brings attention to energy efficiency.

46. China is at risk from global warming and the vast majority of greenhouse gases are generated by human activity. China is at greater risk from severe weather, the greater variability of rainfall and rising ocean levels. Yet there are energy futures that support both socio-economic development and the environment. National policies are needed to guide energy investment in this direction. It is also critical to build national level capacity for participation in the work under the UN Framework on Climate Change and the Kyoto Protocol. The UNDP is ready to help with technology transfer, information exchange and capacity building.

47. Regarding water, conventional wisdom held that increasing water supply would lead to the satisfaction of water demand. But as with energy, it is key to work on the demand side. This is especially relevant to western China where large areas are prone to desertification. Without demand management, goals cannot be met and needs satisfied. Demand management involving conservation, re-cycling and re-using of water are often the most cost-effective ways to meet water needs. Aggressive means such as proper pricing and the use of water saving technologies in agriculture are needed in the western regions. To avoid the environmental and social conflicts associated with large infrastructure projects, it has been found that ground water storage is more effective than storage of water in large reservoirs.
Similarly, using forests and wetlands to buffer floods is more effective than building dams and dikes. Under the WDS, water catchment is to be increased in the upper reaches of major river systems. But public consultation and participation must be included in the decision-making process.

48. A large portion of the innovative solutions that are to be adopted if the WDS is to succeed will depend on business and industry. Business and industry groups need to be consulted. It would be important to bring onto the Council Chinese business representatives. It is also necessary to foster public-private partnerships in given sectors. The WBC is involved with this kind of effort in the mining, cement and automobile sectors worldwide. This experience could be used by China.

49. Education is key in the WDS. Many of the measures advocated depend on human resources and technical capacity. Human resources are more scarce in western regions, yet it is people in those regions who will have to implement the WDS. While most of China is implementing the nine-year compulsory education program, in many areas of western regions six-year compulsory education is still difficult to achieve and illiteracy rates are high. Educators and education facilities are scarce. That is why the government is starting to implement a distance education program using satellite and internet technology. Leapfrogging existing technologies will help speed up the process. And this works well with the WDS’ focus on science and technology.

50. Clarification is needed on how China will realize both vertical and horizontal administrative integration in the implementation of the WDS. It seems that the various ministries and agencies involved in the WDS are operating in isolation from each other. Perhaps sectoral planning could be done with the participation of several relevant ministries; this is something the international community could help China with.

51. While the Council is focusing on the WDS during this AGM, it must be understood that environmental problems know no border, and that the Council should continue to address issues that are relevant to the whole of China.

52. It is good that the Council is starting to talk about Phase III. The German government has supported the Council for the past seven years and is in favour of continuing this. In order to do so, the concept paper on Phase III would have to be completed by March 2001 in order to meet budgeting deadlines in Germany.

53. Western China at present does not have much of an environmental industry, which means it is in a weak position to implement the WDS along sustainable lines. The key is having the technology to realize cleaner production as well as energy and resource efficiency, rather than having to do end-of-pipe treatment. Strategies need to be adopted by the Chinese government to encourage this move, with market incentives as opposed to command and control mechanisms. There is also a need for financial mechanisms to attract resources into the areas of environmental protection and energy efficiency. These financial mechanisms would mobilize China’s sizable domestic savings, generating funds for those crucial green investments.

54. Education is crucial to the WDS, and given the current situation, distance education will no doubt be key. What is particularly needed is enterprise and business management capacity building. Unless the managerial skills of enterprise managers in western China are improved, there is little hope for much progress.
55. Better coordination at all levels of the Chinese administration is needed between the environmental protection bureaux and the economic development and economic trade commissions in order to better integrate the environment in all economic planning.

56. Pressure for economic development often overpowers good conservation intentions. In Western countries, valuable cultural heritage was lost in the rush for development – heritage which we now wish we had preserved. China has a rich cultural heritage, particularly in western China. The WDS should involve respect for cultural diversity and cultural heritage.

57. China has achieved significant progress in the reduction of the use of coal while maintaining high economic growth – a fact which is not widely known.

58. For transport planning, it is best to focus on what needs to be moved before considering the appropriate modes. It is not a given that China needs to set up a diesel or petrol distribution system in order to favour truck transport along highways. It may be possible for China to leapfrog to fuel cell technologies. In developed countries, one of the obstacles to fuel cell technology in transport is the large infrastructure already in place for the distribution of gas and diesel. Perhaps in the case of WDS, it would be useful to consider the technologies which we know will be viable and sustainable in the long term, and are ready for practical application today.

59. It is important to recognize that reforestation and creative uses of energy combining to reducing emissions of greenhouse gases have the potential to draw funds from the international community under the CDM under the Kyoto Protocol. This illustrates opportunities present for China in the WDS.

60. In preparing to launch into the WDS, China may want to summarize the lessons learned from the fast growth that happened in the south-east, identifying opportunities and pitfalls. This summary of the experience in the south-east could also inform a review of China’s laws and regulations in relevant areas, as well as allow the central government to provide guidelines for provincial and local governments as they look to their own planning.

61. The principle of adding value to natural resources through processing, instead of shipping out raw resources should be considered by China. Otherwise, western China will not reap the economic growth benefits that would help it develop (jobs, tax base, capacity building, etc.) – these would be exported to coastal areas where industry is already established.

62. Effective forest protection necessitates local public consultation and participation. Experience around the world has shown that without local involvement, forests will disappear a few years after planting, as local people need an income and have little alternative but to poach the protected forests for timber. Involving local populations and enterprises early in the planning process can ensure a local sense of ownership and the incentive to police the protected areas effectively.

63. The WDS presents an opportunity for effective inter-modal transport planning and implementation, where car, truck, rail, air and river/sea transport can form an efficient network. In doing so, land use can be optimized, ensuring minimal environmental downside, while transport efficiency is increased for both passengers and freight.
64. Urban migration is a global phenomenon. In the near future, 70% of the world population will live in cities. Planning cities that are more livable and of a more human scale is becoming crucial. It is perhaps advisable to do reverse planning, by locating industry in rural areas, far from urban settlements, to relieve urban congestion.

65. One of western China’s advantages is its rich resources; the disadvantage is the fragile ecosystem. In the course of the WDS, no doubt land and other resources will be wasted in the rush to develop, particularly in the mining sector. Precious water resources will also be squandered. Environmental medical research was conducted in Jiangxi province near a tungsten mine and findings showed that contaminated surface water used in paddy rice production had a severe impact on human health in the area. Yet the economic benefits of the mine were not sufficient to clean up the damage. Therefore, it is recommended that before a mine is approved in the context of the WDS, that zero-tolerance on discharges be imposed, requiring the mine to employ the latest and best technologies to control effluent.

66. The WDS is clearly needed, since 75% of China’s poor live in the area and that its GDP is only one third of the coastal areas. But provinces in western China have few resources, and it is expected their budgets will become even more stressed due to the demand on investment in infrastructure. A mechanism is needed to allow for fiscal transfers from the central government, from the wealthier eastern coast to the interior. This would be of clear benefit to all of China in the long run.

67. One of the government’s main roles is to create an enabling environment for the good functioning of markets and for the growth of the private sector. In western China, markets are poorly developed and poorly served. In the initial stages, it will be necessary for the government to assist, developing the necessary infrastructure, enacting fair and transparent legislation, putting in place information systems and so on. The government also has to deal with externalities such as the environment, therefore enforcing regulations and putting in place incentives and disincentives. The key is for the government to effect market-friendly interventions.

68. There are good examples in western countries of various government ministries working at cross-purposes and hindering development and conservation. Dealing with complex, cross-boundary issues such as soil erosion and desertification require central coordination and a bottom-up approach. The WDS is China’s opportunity to implement this kind of approach.

69. Sweden is interested in taking part in Phase III of the Council, perhaps supporting concrete projects proposed by China and coordinated by the energy or biodiversity WG. However, a more concrete, detailed proposal should be submitted to the Swedish government by March 2001 in order to allow for budget planning.

70. Central planning is necessary for programs of the scope of the WDS. However, the amount of funds required and the scope of the work to be done are such that the private sector needs to be involved; government alone cannot implement something as comprehensive. Unfortunately, in the case of the natural gas pipeline from western to eastern China, the decision was made to invest in this infrastructure before consultations with the private sector. Bidding on the project was open to foreign enterprises. But the economics of the pipeline project are such that the cost of the gas from western China delivered to eastern China will be substantially more than the cost of gas from the East China Sea, as well as other competing energy sources. Enterprises have to behave according to the rules of the market. The response of Chinese firms to the call from the central government to develop the western
regions has not been overwhelming. We as a Council should give out a warning: developing western regions is commendable, but the government must get rid of disincentives for investment to be directed there.

71. In western China, water management will be crucial in that water is the necessary condition for human activity, especially in arid areas. As was discussed at the World Water Forum in The Hague earlier this year, there is a looming global water crisis. In this context, it is astonishing that a large segment of the discussion on the WDS focused on the need to fulfill increasing demands for water. Instead, attention should be paid to the dynamics of the supply side. It is often assumed that ecosystems and nature conservation are competing users of water. Water supply depends on ecosystem protection and management. Effective water management must integrate forest management at the watershed level, on an eco-regional basis.

72. The EU has been focusing on regional development efforts, but in this case, it has been the developed north helping the less developed south. Extremely poor regions that want to catch up to their richer neighbours will often adopt economic development strategies that are damaging to the environment. The EU has found that it has had to pay for southern development twice: the first time for economic development, and the second time for clean-up and greening. People need to be persuaded that the environment has to be integrated from the outset in development plans.

73. Education is key to the success of the WDS. Special efforts should be made to upgrade and expand higher education and vocational training in key urban areas. Only by investing in human capital can economic growth and sustainable development be achieved. The dissemination of science and technology should be encouraged, in particular with the development of the enabling infrastructure of the internet and of distance education technologies.

74. When dealing with renewable energy sources, we should encourage the coupling of renewable energy use with the manufacture of related equipment. In western China, these efforts should be encouraged, in that this would help create jobs and generate cheaper domestic technologies. The Xinjiang Wind Corporation is successfully transferring to China up to date technology imported from Europe. This could be done on a larger scale with photovoltaic and biomass technologies. Western China is rich in key resources such as rare earth and materials needed for the synthesis of compounds that facilitate the storage of hydrogen for use as a high-tech fuel. In preparation for the time when fuel cells and hydrogen are commonly used, exploration should be made of the conditions necessary to promote the development of these industries in western China.

75. In traditional sectors such as agriculture, it is necessary to blend traditional knowledge with high technology. In Xinjiang and IMAR, local governments and Italian firms are cooperating to raise millions of cashmere goats and produce high-end knitwear and woven garments, generating employment for thousands of workers. Breeding, animal feed formulation and advanced textile technologies had to be combined to bring about this project.

ITEM 5. REPORT ON THE WORK AND FINANCES OF THE SECRETARIAT
With vice-chair Leonard Good presiding, the Secretary General of the Council Zhang Kunmin reported on the work of the Secretariat since the 3rd Meeting of Phase II. During his report, he outlined the following issues:

1) The Secretariat sent to 24 ministries and agencies of the central and provincial governments the recommendations issued by the Council at the end of the 3rd Meeting of Phase II. Twenty have sent the Secretariat written – and in some cases very comprehensive – responses. This has been summarized by the Secretariat in its annual report.

2) Council WG activities were assisted and followed by the Secretariat. A new Task Force on Forest and Grassland Issues has been initiated.

3) At the urging of CIDA, the Secretariat took part in a self-assessment (SA) of the CCICED. The SA report provides the Council with the first comprehensive look at operations over the past eight years and supplies concrete data documenting the results achieved by the Council. Several recommendations have been made for improvements to the CCICED. It is generally agreed Phase III would be desirable and the Secretariat will assist in the production of a concept paper for study by prospective donors early in 2001.

4) The Secretariat was involved in preparations for the 4th Meeting of Phase II, preparing draft recommendations and circulating them to members and WG Co-Chairs for their comments. The Secretariat was also involved in assisting communication between Council stakeholders over the past year and ensuring smooth functioning of Council activities, including meetings and workshops hosted by the WGs and Task Forces.

5) The Council’s website has been improved and updated; the new website address is www.cciced.org. Council documents, including annual reports, the SA report and other documentation are available for download.

6) A summary of Council’s annual financial statement was outlined.

ITEM 6. REPORTS BY THE WORKING GROUPS

Vice-Chairs Leonard Good, Qu Geping and Xie Zhenhua presided over the presentation of the Working Group reports and ensuing Council discussions.

a) Forests and Grasslands Task Force

Shen Guofang, Task Force Co-Chair, reported on the first initial activities of the group. First, to clarify a term used exclusively in China, ecological construction means environmental protection, along with amelioration and restoration of degraded areas. A short presentation of the severity of soil and wind erosion reveals the extent to which western China is subjected to these phenomena. This is why this Task Force was established. Still in its initial phase, so some of the empirical work has just started and there are few results to report on as yet. This group needs help from other WGs of the Council.

Recommendations of the Task Force assert that the emphasis on ecological construction in western regions is a correct one. However, some problems have cropped up during initial implementation. The policies implemented, for example logging bans, represent too abrupt a change for local people. In addition, there is a need to effect forest conservation according to the type of ecosystem found in an area. Simply implementing a logging ban is difficult for local governments to enforce.
80. More preparation work needs to be done before areas are converted from agriculture back to forest cover. At the present, application of this policy is running ahead of the much needed experimentation stage. There is also too much emphasis put on economic varieties of trees, producing sellable nuts and fruit - there are too few real, bio-diverse forests being re-established, and the seeds and seedlings necessary are not yet available. It is necessary to implement a comprehensive management plan for western forests, with flexible and locally specific measures reflecting local microclimates and ecosystems. The social, economic and environmental impacts of the forestry plan should be monitored. However, the State Council is consulting with the grassroots on this issue and recent documents issued reflect this.

b) Coordination of the Working Groups

81. The WG Co-Chairs’ Coordination Meeting was held the day prior to the formal beginning of the Council’s AGM and was chaired by Arthur Hanson. In his report to the Council on the meeting, Mr. Hanson made the following remarks:

82. Substantial exchange is now taking place among the WGs. This is leading to better consistency in direction and activities. Examples of cooperation among WGs include joint membership, production of joint papers, the systematic review by the Economics WG of all reports produced by others, as well as information exchange and participation in seminars and workshops.

83. Future opportunities for collaboration were explored and include: cooperation of the Sustainable Agriculture WG in the Biodiversity WG’s work on invasive species; cooperation between Energy, Transportation and Economics WGs on how to get high efficiency vehicles (using alternative fuels such as syn-gas) produced in China; Sustainable Agriculture and Pollution Control WGs could combine efforts to focus on the Pearl River.

84. The WG Co-Chairs’ meeting participants discussed the draft recommendations on the WDS, specifically both the drafting process and the substance of the recommendations. The consensus was that the focus on western China should not lead the Council to lose track of the nation as a whole. It is understood that WG recommendations will be sent by the Secretariat to relevant ministries and agencies of the government.

85. Participants agreed that the WDS should focus on sustainable development and sustainable investment patterns, with a broadening perspective expanding from the project-specific to an overall long-term strategy. The WDS will require institutional reforms at local and provincial levels to allow for integrated planning – with the possible creation of a policy officer responsible for implementation and coordination. There is a need to clarify the meaning of “ecological construction”, since this terminology is specific to China.

86. Several issues were identified for consideration by the Council in the future. These include: water management in China to 2030; integration of economic and environment in policy and planning; transition to a “low carbon economy”; the role of GMOs in China’s future; economic incentives and CDM.

87. The WG Co-Chairs endorsed the SA report and support the recommendation of extending the Council to Phase III. However, the need to address weaknesses in the functioning of the WGs is also recognized. Concern was expressed over the proportional decline of China’s financial support to the Council. It is also hoped that WGs that are under-
funded can secure more adequate funds during Phase III. The Council should also consider how to make its achievements better known inside and outside China.

c) Energy Strategies and Technologies

88. Professors Thomas Johansson and Ni Weidou, Co-Chairs of the Working Group on Energy Strategies and Technologies presented the WG’s report, emphasizing the following points:

89. Three publications have been distributed to the members: the WG’s annual report, a summary of the WG’s activities during Phases I and II of the Council, and the World Energy Assessment Overview to which international and Chinese members of the WG contributed.

90. The WG’s objective is to analyze and promote energy approaches which simultaneously support sustainable development in all its social, economic and environmental dimensions. The WG has identified several options which foster this, namely more efficient use of energy, increased use of renewable energy sources, the use of clean fossil fuels. This past year, the WG has focused on renewable energy and clean fossil fuels. This work was done through research and studies which were then published – a list of the publications is included in the annual report. The WG also sponsors two workshops per year and has been involved in demonstration projects.

91. The WG has been involved in the promotion of biomass gas for heat and cooking in rural households. In Jilin province, the government in cooperation with UNDP has assisted the WG in supporting six demonstration projects. There is also a tri-generation project where agricultural residues are being gasified to produce cooking gas and gas for heat and power generation. A workshop on this project was held earlier this year.

92. The WG is also looking into the use of carbon dioxide for methane production in unminable coal beds. A demonstration is now underway involving China’s Coal Bed Methane Corporation and a Canadian consortium.

93. In promoting renewables, the WG has called attention to an array of options for the widespread dissemination of renewable energy. Using market based mechanisms leads to lower costs and wider dissemination. The interest of the Chinese government increased after the workshop put on by the WG and this has now been included in the 10th FYP.

94. In the report, issues that are key to the WDS are highlighted, but they are also of relevance to China as a whole. Polygeneration, on which the WG has spent considerable attention, refers to the production of clean fuels, chemicals, heat and power from coal in ways that are compatible with sustainable development. This involves the production of syn-gas which then leads to other by-products such as methanol and di-methyl ether (a potential substitute for diesel that can also be used for cooking). The gas left over can then be used in combined heat and power generation. The product mix can be adjusted at will. The technology is available in China and is already being used in some 20 chemical plants. It is therefore essential to link up the chemical with the energy sector. The enabling policy environment to foster this would be to provide grid access to the power generators, paying for the energy at competitive rates. This is an important component of the planned restructuring of China’s power sector.
95. The commercialization of modern biomass technologies, presently being demonstrated in Jilin province, is key to promote the utilization of presently wasted crop residues which represent 20% of China’s total energy needs at present in coal-equivalent. Policy challenges relate to the reform of the power sector in that grid access for electricity generation from biomass is key. The WG is interested in developing concession schemes similar to those developed for wind farms, which could lower the transaction costs associated with small installations (100 kilowatt) of biomass electricity generation stations.

96. Wind energy development is of interest to western China since 50% of the country’s wind resources are found there. At present, there is slow growth in large scale wind generation. However, the technology is there and costs are coming down thanks to domestic production and to improved transmission and storage technologies. Power sector reform is once again key to the promotion of wind energy.

97. The high voltage transmission lines and the pipelines are ways to get energy resources from west to east; it adds value to the energy resource before it is transported east. Both wind and biomass electricity generation could be instruments for poverty reduction and for local economic growth.

Discussion

98. Shell Oil is working on coal gasification in China with Sinopec and intends to develop five gasification projects in the country, three of them associated with fertilizer production. One of the projects involves a multi-product syn-gas center in Shanghai. Shell is also working with Qinghua University on the development of liquid hydro-carbons from coal for use in transportation. This is key to China’s energy future, and the price is dropping all the time, eventually making this fuel competitive. These are the practical potential outcomes of the work done by this WG.

99. One of the by-products of taking coal gas and producing hydro-carbon liquids is clean water. This by-product has added value in both western and eastern China, given the scarcity of clean water. Another by-product is sulphur, which China now imports from western Canada.

100. China at present is pushing the development of natural gas, but this is only a short term and expensive option for China. The long-term, cost-effective energy option for China is coal. In the long run, clean coal technologies will produce gas for multiple use. The key is locating industrial energy users at the mine mouth in order to avoid unnecessary transport costs.

101. There is more carbon dioxide released from coal gasification than from natural gas, so this has to be considered and coal bed sequestration has to be pursued; some work on this is already taking place in Canada.

102. Perhaps there is a need for more consideration of economics in the context of polygeneration; this would allow the WG to put a time-frame to the probable wide scale adoption of the technology. There should also be consideration of how to facilitate the distribution of alternate fuels; in North America, there are green corridors where these fuels are available to truckers. Perhaps cooperation with the Transportation WG would be beneficial on this issue. The Trade WG could also become involved in the issue of polygeneration technology transfer to China.
103. The objective of the 10th FYP to have 5% of China’s energy production coming from renewable sources is laudable. In order to achieve this objective, China would have to generate six times more power through wind turbines. There are barriers to this expansion now, primarily cost of production. At present, the electricity grid resists paying a premium for wind-generated power. This is due in part to a lack of experience in power purchasing agreements, debt equity structure and equity investment. It is not sustainable to force utilities to purchase wind-generated electricity. But perhaps other economic instruments dealing with internalizing the negative impacts of thermal power generation (the sulphur dioxide tax presently studied by the Economics WG) will yield incentives to encourage investment in wind power generation.

104. ADB tried and failed to put together a commercial project on coal bed methane. There are still outstanding technical issues that need to be resolved, as well as the issue of distribution networks and of pricing. More work also needs to be done on the enabling environment provided by government regulations, policies and pricing frameworks.

105. China will need to consider small-scale power generation for areas which are isolated and where the provision of grid power is prohibitive. It is necessary for policy makers to recognize the role such small-scale power generators could play.

106. There is a drive for small-scale energy generation. The power generation and power transmission technologies allow for this, and it should be further examined. Energy efficiency should also be further studied and advocated. Finally, in order to support the financing and adoption of solutions discussed by this WG, the CDM that will be discussed at the COP-6 meetings will have to be made workable. It is hoped China will take a pro-active approach in its participation to the COP-6.

107. One major economic issue in China is the present use of perverse subsidies, with pricing not reflecting any of the external costs involved. New technologies are more expensive than existing ones, making adoption of clean energy more difficult. Pricing solutions have to be found. The Renewable Petrolia Standards (RPS) being discussed should provide us with an option. The WG is outlining energy scenarios for China to 2030 and will be presenting this to the Council by the next AGM.

d) Sustainable Agriculture

108. Dr. Bernard Sonntag, international Co-Chair and Lu Jian, acting Chinese Co-Chair of the Working Group on Sustainable Agriculture highlighted the following points from the WG’s annual report:

109. The focus of the WG for the year 2000 was the red soil hilly area of southern China. This follows the work done in previous years on the Loess Plateau of north-western China and the grasslands of the south-west. Some of these recommendations have been brought forward again given their relevance to the WDS.

110. The red soil hills of southern China cover 12% of the territory and are spread out over ten provinces and autonomous regions; the topography is mostly mountains, hills and paddy land interspersed with rivers and lakes. The tropical to sub-tropical agriculture practiced on the red soils is diverse, with forestry dominating at higher elevations. A field trip in the spring to Hunan and Jiangxi allowed WG participants to meet local officials, experts and
farmers. The field trip was followed by an International Workshop on Integrated Resource Management and Sustainable Agriculture Development in the Red Soil Region of South China. Hunan and Jiangxi were selected because of their involvement in a new government program policy aimed at restoration of lakes (namely Poyang and Dongting lakes) in order to have the lakes play a key role in flood mitigation, fisheries and wildlife habitat.

111. The economy and environment of the red soils region has changed markedly over the past 20 years. A number of problems need to be dealt with in order to achieve sustainability in the agriculture sector. These are:

1) Excessive pesticide, especially insecticide use - these are subsidized inputs;
2) High rates of fertilizer application – also subsidized by the state;
3) Burning of crop residues;
4) Soil erosion, declining organic matter in the soil, industrial pollution and inefficient water use;
5) Low levels of investment in agriculture research and technology transfer;
6) Limited storage and processing capacity;
7) High levels of government spending on grain storage – limiting investment in other initiatives;
8) Economic, social and environmental problems associated with the restoration of the lakes.

112. In order to deal with these issues, the WG recommends the following steps be taken:

1) Curb the excessive usage of pesticides (pesticide use in China has continued to increase while it has been decreasing in other Asian countries) and implement a national Integrated Pest Management (IPM) strategy. This could first be extended to rice and vegetable crops. IPM would allow yields to remain high while cutting input costs, reducing health risks to farmers and consumers, allowing compliance with WTO requirements with respect to the export of farm products, allowing for improved water quality and greater fish production. In this context, China also needs to complement IPM with policies to reduce pesticide residues in foods, backed by stronger measures to ensure compliance. Two demonstration projects are proposed to test main approaches and options in Jiangsu and Zhejiang provinces, where farmers are already using IPM.

2) The Government of China (GoC) should review as soon as possible the social, environmental and economic effects of its food grain security policy. The national policy imposes a target of 95% self-sufficiency in food grains and is applied to provincial and local governments. Internal grain trade is restricted. The policy results in grain production in all areas of China, whether the land and other conditions are suitable to grain production or not. In addition, local and provincial governments are mandated to purchase and store grain, limiting their capacity to invest in other necessary programs such as education, poverty reduction and infrastructure construction.

3) The GoC should make a concerted effort to improve the skills of extension and farm services personnel, with emphasis on marketing, financial management and environmental protection. Sustainable agriculture in a market economy requires educated farmers and advisors. The skill levels in China are relatively good for production matters, but are limited in marketing, financial management and environmental management.
4) Land management systems should be developed in order to use crop residues more effectively, and to improve water and soil conservation as well as the efficient use of plant nutrients.

5) The GoC should increase its support to agricultural research and development. Research and extension institutions should be more client-focused and should do more field testing and research involving farmers’ active participation. There is increasing severity of soil degradation, including erosion, salinization, pesticide pollution, organic matter loss and others, reducing soil fertility and posing health risks to farm workers as well as food safety concerns. Public investment in research has decreased in recent years. Coordination and cooperation across institutional boundaries is weak.

6) The GoC should increase its investment in areas that will support the relocation of farmers from areas reclaimed for lakes and flood control in the red soils areas. Investment should increase in replacement housing and employment for people who will be displaced from agriculture. Investment in the restoration of the ecological functions of the lakes should increase. Research and development funding should go up to explore economic opportunities associated with the seasonal use of reclaimed lake areas.

113. Regarding the recommendations of this WG from the AGM of 1998, a pilot project dealing with grasslands in the IMAR has been funded by CIDA with matching contribution from the IMAR government, and implementation has just started. There will be more to report to the Council on this project next year.

114. Regarding the WDS, this WG has covered several ecosystems relevant to the western regions in past years and has already made several pertinent recommendations. In order to effect ecological construction and environmental conservation, it is not sufficient to give farmers grain compensation for the conversion of marginal land to grasslands and forests. The main concern of farmers in the western regions is increasing income. The need for rural employment and for rising incomes determines local attitudes towards reforestation efforts. In addition, regarding water use in western China, studies have pointed out that per capita utilization is higher than on the north China plain; improved water management is therefore needed.

115. The Council’s advice should actually be delivered to the GoC prior to implementation of large-scale projects and programs. More timely delivery of recommendations would increase the effectiveness of the Council.

Discussion

116. The points made on water in western China need some correction. Northwestern China has severe shortage of water if you look at the per capita consumption of water. In addition, most areas of the northwest have very little precipitation, under 100 mm per year. There are national measures now put forward to deal with water shortages in China. The priority has been put on ecological construction and the investment in infrastructure in order to optimize water resources available in the northwest. Water conservation, improved water utilization and economic restructuring will help us better manage the resources we have. China will also divert more water to the water-short areas of the northwest, solving the water supply shortage issue.
The overuse of fertilizers and pesticides is common in Asia. It is driven by the need to increase productivity and increase incomes on small land holdings. The intensification is not sustainable. The solution is to re-orient land use in order to create more jobs and to generate higher incomes. The recommendations of the WG dealing with IPM, integrated nutrient supply, water management and so on, can be put in a package called “precision farming”. Inputs are used at a minimal level, only up to levels that are absolutely essential, thus cutting cost of production without affecting yields, but allowing for increased incomes on a sustainable basis. The WG could look into demonstration projects for precision farming in various agro-ecosystems.

On the issue of food security policy, it is clear that the accepted international view of food policy is now couched in terms of purchasing power and income. In very small farms, it would be useful to look at systems that maximize income and employment, both on and off-farm, including in the agro-forestry, post-harvest and food transformation sectors. There would be an opportunity for the Council to look at the whole food security policy issue.

More research and investment in agriculture research and extension is needed. Perhaps the creation of a joint task force of the Sustainable Agriculture WG and the Biodiversity WG should be considered in order to look into the issues of bio-safety, biotechnology and biodiversity. China is rich in agro-biodiversity, which is key for future food security. This Task Force could study the Cartagena Convention on Bio-safety and look into its application in China; it would also be important to examine bio-partnerships between farming families and the private sector – instead of the bio-piracy that allows corporations to profit from misappropriation of traditional knowledge - based on advantages for both to the conservation of agro-biodiversity.

Excessive use of farm chemicals is a worldwide problem. The nitrogen load in the environment is changing the nitrogen cycle just as much as the carbon cycle is being affected by greenhouse gases. One aspect of the problem is its contribution to greenhouse gas emissions – a major contributor to non-carbon emissions. The same measures protecting water quality from pollution due to excessive fertilizer also reduce greenhouse gas emissions. It would be advisable for this WG to consider not only the potential benefits from reduced nitrogen runoffs for surface water, but also the reduction in collateral damage caused by this to greenhouse emissions. The precision farming approach proposed earlier could also become a good CDM project.

The overuse of pesticides, and in particular insecticides, is crucial. The recommendation to the GoC on the promotion of IPM should be emphasized. The argument missing in the discussion of the WG is the fact that pesticides contaminate ground water and aquifers. This contamination is an irreversible process; the ground water cannot be purified and restoration to higher water quality can take decades. In view of the severe impact on sustainability, the GoC should be urgently encouraged to develop the IPM strategy.

Genetically modified organisms (GMOs) are not discussed in the report, but it is an issue of growing importance. Work on GMOs could also be included in the brief of a joint Task Force suggested earlier, to look at bio-safety and so on. In the UK, GMOs are such a controversial issue that the government has suspended all production of GMOs, has imposed strict labeling and several commissions are now looking into various relevant issues. China is producing GMOs since work was done on cotton and on certain varieties of pepper. Further examination of GMOs in a Chinese context is needed.
123. The Trade WG should also be involved in any work considering GMOs, given the disputes now emerging around the trade in GMOs. There are other key implications such as ownership rights. Clearly, there have to be protocols in place that relate back to the trade system.

124. Excessive use of pesticides in China and other Asian countries is not only China’s problem. Increasingly, organic pollutants are finding their way through bioaccumulation up the food chain and across oceans to the arctic areas of North America, eventually finding their way into the breast milk of aboriginal people.

125. The present logging ban in effect in northwestern China will not lead to a reduction in the use of wood in China; rather it will lead to increased lumber imports and increased cutting in areas not covered by the ban, potentially in red and yellow soils areas of southern China. This WG’s recommendations should be stronger on this. China is using seedlings from species that are not necessarily appropriate in its reforestation programs – mostly eucalyptus from California and Australia. The extensive introduction of these trees has a negative impact on the local ecology, including local biodiversity. This WG should collaborate with other relevant WGs and Task Forces to work on this issue.

126. There is not enough understanding in China on the whole complex of issues surrounding GMOs. The Trade WG’s initial work on this reveals there are serious problems and consequences associated with the proliferation of GMOs already. The area of foreign investment in the biotechnology area should be studied; companies can now test GMOs in China. Simply labeling products for GMO content is not sufficient in China, since there is not enough public education on this issue. Further work on these related questions should be carried out by the Sustainable Agriculture and Trade WGs.

e) Cleaner Production

127. In the absence of Co-Chair Qian Yi, Co-Chair Tsugio Ide presented the report of the Cleaner Production WG and underlined the following points:

128. The WG is continuing its demonstration project in Taiyuan city and has assisted the municipal government in drawing up local regulations for industry. The Regulations on Cleaner Production in Taiyuan have gone into effect, providing both a basis for enforcement and demonstrating this to other municipalities.

129. A group of cleaner production projects have been implemented with 20% of the key enterprises in Taiyuan, such as Taiyuan Iron and Steel Company, Taiyuan Chemical Industry Group and others. The projects are demonstrating both the economic and the environmental benefits to be derived from cleaner production.

130. Indicators for the assessment of cleaner production are being developed. Research on this was conducted in Chinese and Japanese universities; experts held discussions to come up with efficient and reliable indicators. Indicators are important tools to help regulators identify weaknesses, measure progress and identify future targets.

131. A national workshop on cleaner production was held in September. Scholars, people from industry, the government and academia were involved in discussions revolving around
production policy, enterprise management, cleaner production technologies and research
issues.

132. The recommendations of the WG include:

1) SEPA and SETC should review policies and regulations relevant to cleaner
production. Administrative controls should be strengthened and incentives for
the adoption of cleaner production should be put in place.
2) The lessons learned over the years by this WG should be disseminated to other
cities and sectors by the Chinese government, in order to speed up adoption of
cleaner production.
3) Ministries such as SEPA and SETC should convene comprehensive workshops,
conduct research, collect and summarize relevant experience and lessons, and
promote cleaner production enthusiastically.
4) A sound legal and regulatory framework could speed up adoption of cleaner
production. However, the Cleaner Production Law is not yet enacted. There has
to be more research into this law and it should be brought forward expeditiously.
5) At present, cleaner production application in China only covers the secondary
sector of the economy; this needs to be expanded to the primary and tertiary
sectors as well.

Discussion

133. From the perspective of the National Association of Chinese Enterprises, this WG has
produced a good report. It emphasizes rightly that enforcement of cleaner production and
environmental protection must start at the individual enterprise level. This Association has
millions of members, of different ownership types. The membership is starting to cooperate
with the government on the WDS; cooperation between eastern and western enterprises will
be mutually beneficial due to low labour costs in western China and well developed marke
ts in eastern China. Cleaner production should be something that is included in the technology
transfers that will take place as a result of the WDS, and this should be backed by legislation
and regulations.

134. In Malaysia, smaller enterprises initially failed to adopt cleaner production processes
and technologies due to lack of awareness, know-how and capital. It might be advisable for
this WG to consider developing a mechanism whereby Trans-National Corporations (TNCs)
and larger firms adopt smaller enterprises – particularly their suppliers – providing them with
guidance and technical assistance. This approach has been successful in helping the small and
medium enterprise (SME) sector to achieve ISO 14000 certification in Malaysia.

135. Business will adopt cleaner production only if it leads to lower costs or higher profits.
There are two ways to get enterprises to adopt cleaner production. The first is regulation; if
the cost of non-compliance is high, firms will be compelled to adopt this. But it is key to have
in place an effective monitoring mechanism so that companies do not escape supervision. The
other method is cleaner consumption on the part of society as a whole. People must support
cleaner production by purchasing products that are the result of clean processes. This leads to
added business opportunities and higher rates of adoption for firms. But this kind of
demand-let cleaner production – green consumerism – requires public education and takes
time. In both cases, regulation and green consumption, the government has a clear role to
play.
There are five conditions that would contribute to making cleaner production a success: political support from leaders in government and industry; regulatory measures and mechanisms; knowledge of technology and best practices; convincing examples and demonstration projects; economic incentives. Most of these issues have been addressed by this WG. In visiting the model cities of Dalian and Xiamen, members saw that all five conditions are in place, ensuring adoption of cleaner production. Perhaps this WG could incorporate the experience of China’s model environmental cities, from which all of China could benefit.

In discussing cleaner production, problems are often emphasized and opportunities are neither stressed nor understood. At the World Business Council (WBC), we talk about eco-efficiency. It is possible to combine better ecological performance with improved economic performance. Investors are indeed starting to take this into consideration and Dow Jones now has a sustainability index comprising leading companies in this field. The selected companies have a 5% advantage on the return on investment. No doubt legislation is needed because some firms will try to get away with doing the least, but it is more productive to stress economic advantages in promoting cleaner production. The WBC is in the process of creating a China Business Council for Sustainable Development which will help promote this concept.

In the 10th FYP, SEPA has attached a higher priority to cleaner production. But policies must be consistent. At present, EIA methodologies and the discharge permit system emphasize end of pipe treatment. SEPA is now considering revising this in order to promote cleaner production audits. Eco-labeling and the promotion of ISO 14000 are also needed. The experience of Taiyuan in developing a system of indicators could eventually be expanded to other municipalities throughout China. Major efforts in public education will be needed in order to make SMEs adopt cleaner production processes.

China supports economic restructuring using cleaner production. Hundreds of factories and plants – 13 different kinds of factories - that were outdated and polluted have been shut down. Initially, rules and regulations are needed to implement cleaner production. The NPC takes this legal priority seriously and has entrusted SETC with drafting a law on cleaner production. Both this WG and ADB have offered support in this regard.

Pollution Control

WG Co-Chair Toni Schneider presented the annual report to the Council, emphasizing the following points:

The WG held two meetings during the past year. The first meeting included a study tour of Japan, allowing WG members to look at environmental problems in large cities along the bullet train corridor. The second meeting comprised a workshop in Beijing on air quality management, with a focus on particulate matter regulations. It is hoped the information and suggestions made at the workshop will be used by the government in controlling particulate matter, which has serious effects on human health and is difficult to curb.

The WG has come up with guidelines for EIAs which have been translated into Chinese this year. The Chinese version has a preface from the Pollution Control WG Co-Chair Qu Geping and has been sent to 47 cities with good results expected.
143. An ongoing project of this WG is the Pearl River watershed in Guangdong province. The Task Force on Economic Planning and Environmental Protection has also completed a case study of the Pearl River Delta. The WG is looking for more interaction and synergy between the two, although the work was done in different languages. The WG’s studies of the eastern and western parts of the watershed are now complete, while work on the northern reaches of the watershed is soon to be completed.

144. The WG’s first year progress report on carbon dioxide mitigation has been completed but awaits revisions from the funding agencies before being released. The final report should be ready by the middle of 2001. The work is divided in four sections: carbon dioxide emissions and mitigation estimation methods; past CO2 mitigation from 1985 to 1995; policy options for CO2 mitigation in China relying on models; a case study of CO2 mitigation in Shanghai municipality using a complex model involving the entire system of processes involved in production and service activities.

145. A workshop will be held in Guangzhou after the AGM on the new project on Guangdong-Hong Kong pollution. One of the major issues involves acid rain; the other one is ozone pollution. Chinese colleagues are looking at ozone flows between Guangdong and Hong Kong. The experience of Europe and North America on ozone will be discussed at the workshop.

146. A further meeting on Hainan Island will allow WG members to discuss possible Phase III projects. Most outstanding projects will be completed before next year’s AGM, the final year of Phase II.

147. The recommendations of the WG include the following:

1) EIAs should not involve only one pollutant group, say acid rain, but should look at the impact of a combination of pollutants that are likely to occur together.

2) Water pollution control in watersheds, particularly long term options, have not been sufficiently studied; there needs to be a focus on non-point sources such as agriculture, allowing this WG to work with the Sustainable Agriculture WG.

3) An integrated project between the Economics and Pollution Control WGs needs to deal with the need for spatial planning in order to deal with urban pollution, but possibly including the WDS. This project should demonstrate that rapidly developing areas would benefit from concurrent spatial planning and pollution control. A Chinese region where authorities are dedicated to the success of such a project has yet to be selected.

Discussion

148. An integrated approach involving the study of impacts of combinations of pollutants is recommended. The EU has changed its approach over the years. Now, the EU uses WHO and other organizations’ input to take into account long-term objectives to reach. Then, it engages stakeholders – civil society, industry – in consulting and partnership in order to get the necessary data and to develop effective approaches to regulation. Regulation is considered the first base approach; it is possible then to move to other instruments such as economic incentives and voluntary agreements. The EU is involved in such a voluntary agreement over greenhouse gases with the global car industry in order to meet a 25% reduction target for carbon dioxide emissions by 2008.
China should consider the use of “the polluter pays” principle and how it could best be implemented and used in China. It can be controversial, but the EU has found it necessary.

There is now a proposal for a new WG that would deal with sustainable industrial development – a good proposal. It will become important to see how all these WGs can relate to each other while avoiding overlapping responsibilities. Feedback from Chinese colleagues would be appreciated on the interaction of the various WGs.

In the experience of the ADB, many of China’s problems with pollution control have to do with trans-jurisdictional issues. ADB has done lots of work on cleaning up Suzhou creek in Shanghai, but a lot of the pollution originates in Jiangsu province. Enforcement of environmental regulations devolves to the EPBs at the provincial level, but there is little communication or cooperation among them. There needs to be a better institutional mechanism to strengthen enforcement and monitoring when trans-boundary pollution is involved.

g) Biodiversity

Biodiversity WG Co-Chairs Johan Schei and Wang Song presented their annual report to the Council and made the following comments:

The WG has three prime objectives - objectives which fit squarely with the International Convention on Biodiversity. These objectives are: the conservation, the sustainable use and the sharing of the benefits. The three have to be taken into consideration when discussing biodiversity. The WG is dealing both with genetic, or species, diversity and with ecosystem diversity. Functional ecosystems are the most important factor in biodiversity conservation, but they are also the most difficult issue to understand and manage.

Over the past year, the WG has given advice on species management because China has a serious problem with illegal trade and overuse of endangered species. There is still substantial work to be done in this area.

The WG has also been working on tools for increasing the public awareness of the importance of biodiversity. The work on biodiversity information systems is continuing and by next year, the WG will have a website where updated information on terrestrial vertebrate species in China will be found.

The WG has only one meeting per year and this year it took place in Sichuan, a key province for the WDS and for biodiversity. Local officials and academics were invited to the workshop to emphasize the point that biodiversity conservation happens at the local level. Mobilization has to happen at that level because national authorities are too far away to be truly effective.

The WG supports an ecosystem-wide approach to biodiversity conservation, including socio-economic factors pertinent to a given area. This is emerging as the approach to implement the Biodiversity Convention. Key principles underline this approach, and the WG is attempting to introduce these to China. These principles include: management objectives should be decentralized to the lowest appropriate level and should include consideration of impacts on other ecosystems - especially important in the case of watersheds; management must be understood in a socio-economic context; conservation of ecosystem functions is crucial; ecosystem management should be undertaken at an appropriate scale;
long term goals should be adopted and lag effects (key in the case of invasive species) should be taken into account in planning; cyclical changes and other changes have to be included in management plans; limits to systems functioning have to be determined; balance between conservation and sustainable use has to be found; all relevant information has to be considered, including traditional knowledge of local people; stakeholders have to be involved in ecosystem management planning and implementation.

158. As a result of the workshop in Sichuan where forest protection, logging bans and the control of soil erosion and floods are key issues, the WG has come up with recommendations which are also relevant to the WDS. These are:

1) Biologists and ecologists should be involved in the EIAs undertaken in the scope of the WDS. A biodiversity impact assessment should be a part of the overall assessment. Roads are now being built and little is known on whether or not these aspects have been considered.

2) Little is known about the biodiversity of western China or northern China. The information available is outdated and needs to be urgently updated.

3) There needs to be a better understanding of the ecosystems of north western China. There is much said in the WDS about ecological construction, which is a Chinese concept involving a combination of conservation, amelioration and development. But whenever the ecosystems are being impacted, it is key to understand the functions the ecosystems were playing in order to understand the downstream effects of the proposed changes. Ecosystems provide a wide array of goods and services; they fulfill many functions. These systems and their functions are complex, involving the regulation of climate, floods, pollution and so on.

4) There needs to be more research on traditional knowledge of local peoples, in line with one of the articles of the Biodiversity Convention. The WG is proposing some projects in this regard.

5) In terms of grassland restoration and reforestation efforts, China should be wary of importing alien species. Experience in other countries involves the planting of trees that aggravate water scarcity problems. The planting of native species should be encouraged. There must be permanent sources of funds to underwrite this work – not necessarily government funds. Compensation provided to displaced farmers should be higher and the assistance provided for a longer period. The present promotion of economic tree species, while providing benefits to local farmers, could have long-term detrimental effects on the ecological functions of forested areas.

6) On invasive alien species, it is recognized that most food crops produced today are alien species. But some alien species are invasive and pose a threat to biodiversity, health, economic development and food security. Prevention of their spread is urgent. Key is to have rapid response in order to nip the problem in the bud. Eradication of well-established invasive species is expensive and difficult. Comprehensive international action is needed, with China’s participation key. GMOs could be considered under this umbrella.

7) Working with the Sustainable Agriculture WG will be important, given the wealth of agro-biodiversity found in China. The development of gene banks is key here because China is home to the important wild relatives of important food crops. Cooperation with the Economics WG will continue in order to assess the economic values of biodiversity. Biodiversity is the life insurance of life itself, and ecosystem diversity is key to social and economic diversity. But this is hard to estimate in economic terms.
Discussion

159. The Biodiversity WG is now addressing issues of a strategic nature, related to the long-term economic potential of China. A key point is the need to integrate biodiversity valuation in all sectors of the economy – a tough task everywhere. If biodiversity is not valued and is not accounted for in a country’s GDP, it is not taken into account. Education and public information are urgently needed on biodiversity, since conservation hinges on action taken at the local level. WWF is implementing a project in this regard with the Ministry of Education in order to develop a relevant curriculum. The need for effective public information is perhaps something the Council should address during Phase III.

160. China is embarked on an extensive reforestation effort, something that is not recognized abroad. A logging ban and extensive revegetation were recommendations of the Biodiversity WG several years back. But reforestation will not achieve the desired goals if species selection is not done carefully. All vegetation should be considered in this regard, not just tree species. The logging ban’s impact on China’s lumber supplying countries should also be considered. There is evidence that the logging ban in China is leading to an explosion of illegal lumber imports from south-east Asian countries – in some cases rare hardwoods. Indonesia’s illegal lumber production is already equal to legal production and the control of the illegal trade is near impossible. China needs to consider that it is not enough to take care of its own forests; it cannot externalize its environmental costs by importing from other countries.

161. There is a lack of information in China about the biodiversity resources of the country. Sustainable development necessitates this kind of information. China has a law on biodiversity and responsibility for conservation has been assigned to SEPA. 8.8% of China’s territory is now protected in nature reserves and parks – the total 20 years ago was 1%. Public awareness is also making progress. There are more and more programs on television on these issues. People know that wildlife is key to both survival and development. Of course, there still are problems, such as the trade and consumption of endangered species.

162. In the context of the WDS, when SEPA inaugurated a stele inscribed by President Jiang Zemin at the source of the Yangtze River, it was noticed that the high altitude grasslands in the area have been devastated by an explosion in the population of small rodents. This is a problem that the WG could help China with.

163. Regarding the control of invasive species, this has to be considered in the dynamic context of climate change. Ecosystems that are out of equilibrium may lead to native species becoming invasive if the original balance is upset. Climate change has to be taken into account when looking at the issue of alien invasive species.

164. Perhaps China should consider the establishment of a National Institute for Biodiversity. With the rich resources found in China, it is important to inventory this biodiversity, to develop strategies for sustainable use, to set up codes of conduct and to draw up red lists (of endangered species). It is key to set up early warning systems and come up with strategies to combat depletion, such as in situ and ex situ conservation and propagation.

165. In considering agro-biodiversity, it is important to know that in data compiled by IUCN, China is home to 1/3 of the total species of higher plants. China has 40,000 strains of rice alone; some of these were the basis of the “green revolution”. The conservation of this
agro-biodiversity is presently done in situ on countless farms by unrewarded peasants, usually women. Conservation strategies for agro-biodiversity are of top priority for food security. The Food and Agriculture Organization (FAO) concept of farmers’ rights in this context emphasizes the need to share the benefits of agro-biodiversity conservation and exploitation with local communities. These are all issues that a National Institute for Biodiversity could consider.

166. IUCN is active in this area, including setting up a network in communities to strengthen the monitoring of illegal trade and educate business owners. In terms of traditional knowledge, the Kunming Institute of Botany is involved with IUCN in the Southwest China Biodiversity Network. Other relevant work is on the preservation of world heritage sites and funding their management. More work needs to be done to bring the Chinese media onside because biodiversity conservation is hard to understand and is a relatively new concept.

167. Perhaps the focus put on conservation should be balanced with a focus on economic opportunities that are inherent in biodiversity conservation. In the case of pharmaceuticals, the potential of benefits from biodiversity is huge. The benefits to tourism are also significant – particularly high-value tourism.

168. In Europe, GMOs are strongly linked to a concern over food safety. More research is needed before conclusions can be drawn and terms such as “genetic pollution” are used. At present, there is a failure of science and politics to convince the public on the nature of the problem, on the opportunities and the issues. The Biodiversity WG should be encouraged to do work in this area, while keeping an open mind and taking to heart the precautionary principle.

h) Trade and Environment

169. On behalf of absent Co-Chair David Runnals, Co-Chair Ye Ruqiu made the following remarks in presenting the annual report to Council:

170. The WG’s recommendations were drawn in the context of the present focus on the WDS, the completion of the 9th FYP and planning for the 10th FYP, as well as China’s imminent entry in the WTO. Trade and environment are closely related. The focus of this WG is to provide recommendations promoting the sustainable development of trade.

171. A training workshop on WTO entry and its impact on trade and environment was organized by the WG.

172. Several projects were completed and reports submitted to Council. These projects dealt with: Asia Pacific Economic Conference (APEC) trade liberalization and its impact on trade and sustainable development in China; improving the packaging of China’s export goods to avoid future actions such as the US/Canada ban on wood packaging; developing new strategies for trade liberalization of environmental services in China; integrating trade, investment and sustainable development in selected state-level economic and technological development zones; perspectives of clean coal technology transfer to China; prospects for the CDM to accelerate technology transfer and foreign investment in China.

173. The WG has initial conclusions on accession to WTO and its impact on China. Accession will bring both opportunities and obligations, with higher requirements being
demanded of China. WTO will attract foreign capital, speed up the reform of China’s economy and stimulate economic growth. However, there might be more pressure on the environment. Regulations on the environment will be constrained by international practice and China’s environmental laws will have to comply to international standards. A further in-depth study valuing the impact of WTO on trade and environment in China is needed. Export policies may need to be adjusted; in addition, better coordination will be needed between trade and environment authorities.

174. Regarding CDM, China has to be cautious. The mechanism will imply the participation of numerous parties necessitating significant legal and research investments. However, in the context of the WDS, the western regions could become a testing area for the CDM, generating the kind of experience that could then be propagated throughout China. The WG has made several recommendations pertinent to the WDS to the GoC, among others that lessons learned from the rapid development of eastern China be applied to western regions.

175. In the coming year, the WG will do more work on both WTO and the WDS. Attention will be paid to the capacity building of Chinese personnel dealing with these issues.

176. There is also the intention to set up a pilot project in Heilongjiang province to look into the development of organic agriculture and trade in organic food products. Arrangements have already been made to implement this project.

177. Lack of financial resources is an issue for this WG; without funds it is difficult to attract the necessary personnel to help us conduct the planned research.

Discussion

178. China should be warned that they are about to join an organization – the WTO – which is far from perfect. Its environmental committee has never worked. Some partners are so frustrated they are talking about forming a totally separate environmental body to counter-balance the WTO. Following the Seattle protests and the failure of the Multilateral Agreement on Investment (MAI), the WTO is trying to put itself together again. But the people who champion trade are not the same as those championing the environment within governments and on the international scene. It is hoped that China will take a robust stance on these issues and help make the environment a key part of the WTO.

179. This WG has helped China develop and mature its position on trade and environment issues. The WTO work is particularly timely. The study on WTO implications for trade and environment is useful and provides a road map for China on these issues. An emerging issue for the WG is how central investment is to trade and environment. Despite the collapse of international discussions on the MAI, there is an opportunity for China to examine this in the context of the WDS. The issues involving trade and environment are complex and getting more so; the issues are permeating other areas now. The WG’s list of activities and studies reflects this. The WG is now starting to look at the CDM, something that China will have to take a position on at the upcoming COP-6 meetings. It will no doubt be necessary to do more work on this issue.

180. Capacity building in China in order to allow government and industry to deal with WTO implications or ISO 14000 certification needs to be emphasized. China needs to be able to deal with the real obligations and environmental aspects of WTO membership. These are
legal and binding obligations. It is hoped that China will play a leading role on trade and sustainable development. China could be a bridge in areas of dispute where there is distrust between developed countries and less developed countries.

181. Much of the work on trade happens at the macro-aggregated level. We need to look at the impacts of WTO membership on poorer resource areas, as well as on small farmers and the cropping systems they use. If through liberalization there is a shift in relative prices, an assessment of the impact of these changes needs to be made. Typically lower-priced inputs (because subsidized) such as land and water could suffer disproportionately in terms of environmental damage. It would also be key to look at the forests and pulp and paper sectors, where the impacts of WTO have not been assessed – especially since the present logging ban is due to expire in the near future.

182. The preliminary conclusions on WTO membership are that China’s industries will have to modernize, which would be beneficial. But it will also lead to an increased trade in natural resources, which implies environmental risks. We have only scratched the surface of these problems. When potential environmental impacts are listed, and when one considers the usual dispute resolution mechanisms under WTO, one can see that other mechanisms will have to be developed within WTO. As we start to plan for Phase III of the Council, and as we consider perhaps fewer WGs, Trade and Environment should remain one the Council’s WGs.

183. The present dissatisfaction with the WTO as a trade mechanism has detracted from the complementarities that exist between environment and trade. Trade promotes efficiency; efficiency should improve environmental results. There is little data about environmental impacts of increased global trade. In discussions in the US about China’s accession to the WTO, there was an absence of real data on this. One recommendation would be to have this WG document specific cases of environmental benefits or problems arising as a result of WTO. It is feared that expanded trade will lead to accelerated economic growth, overwhelming a country’s ability to control environmental consequences. This is a worthy issue for the Council to look at.

184. The measures of success applied in WTO are almost exclusively economic measures, emphasizing consumption and not taking into account quality of life. Economists cannot measure the esthetic value of healthy ecosystems. So for rainforests, the discussion is reduced to the value of the timber or the potential value of pharmaceuticals to be found. A broader strategy is needed whereby the intrinsic value of nature and the interdependence of ecosystems are taken into account.

185. With China opening its economy to foreign investment wider following accession to WTO, the risk for “dirty investment” also increases. Some institutional arrangement can be made whereby approving authorities would require environmental clearance from an environmental agency.

186. China’s accession to the WTO will not only lead to readjustments in China; the reverse is also true. China is an important and powerful country. It is hoped China will help the WTO evolve. The European Commission is providing technical assistance to China’s bureaucracy through GTZ (German Agency for Technical Cooperation) in order to help the bureaucracy deal with the logistical and pragmatic aspects of accession.

i) Environmental Economics
187. Co-Chairs Li Yining and Jeremy Warford presented the WG’s report and highlighted the following points:

188. Over the past year, the WG has focused on several main issues. The first problem studied was environmental taxation, particularly sulphur dioxide emissions tax. SO2 taxation is thought to be the principal means to reduce acid rain, but the question is how to collect this tax and what will the impact of the tax be on economic activity. Also considered were taxes on gasoline, diesel fuel and carbon. The study on these taxes is done according to economic models which have already been agreed upon.

189. The second area of work dealt with environmental damage valuation. Cost analysis of losses due to atmospheric pollution and losses due to water pollution have been done. Through the assessment of willingness to pay, a model was constructed; the model is divided in three phases of estimation of damage to the economy. In the next phase of this work, the data will be further aggregated and conclusions will be drawn.

190. The third area of the WG’s work involves looking at the linkages between environment and poverty reduction. Environmental degradation is thought to exacerbate the already dire poverty of populations living in fragile areas. In some areas, poverty can be a factor leading to environmental degradation. The results of this work will be of key relevance to local governments who tend to be shortsighted in their policies, only seeing the need to increase incomes for local people at the expense of the environment. Local officials need training. Beijing University is now incorporating the environment into its MBA program in order to promote sustainable development.

191. At the outset of the Council, the general principles guiding the pricing of natural resources were discussed at length, clarified and eventually agreed upon. The prevalent view in China at the time was that the market could solve all problems. In fact, there are market failures and this applies especially to the environment and income distribution. This requires the WG to look at the difference between the prices emerging from market forces and the prices that would truly reflect all costs, including externalities such as environmental degradation and depletion of natural resources. Government has clearly an important regulatory role to play through the tax system or other means in order to remedy this market failure.

192. Regarding implementation of the WG’s recommendations, it is necessary to take into account the costs and benefits of the reforms advocated. To be too hasty by, for instance increasing fuel or water prices, can lead to severe social disruptions and inequities.

193. A number of relevant studies, for instance on water, coal and timber, were conducted and results were reported to the Council at past AGMs. Ongoing studies are addressing fisheries and grasslands.

194. The WG is now applying the same principles used in the definition of the true costs of exploitation of natural resources, to environmental taxes. Initial work on the pollution levy system and the role of environmental taxes in addressing the depletion of fisheries and grasslands has already been published. The next step now is to look in a more general way at price reform in a Chinese context. Green taxation is used loosely by the WG and is understood to mean the inclusion of all relevant costs into the pricing system for all resources, goods and services. A review of the current literature was done in order to develop a general equilibrium model incorporating environmental variables. This is extremely complex and will require considerable time refining and road testing. The process of doing this should
reveal which variables are important, yielding some key indicators. This will allow the WG to look at the impact of energy price increases on employment, industry, location of industry, fiscal revenues and so on.

195. The environmental damage valuation studies being done involve a review of the relevant literature, domestic and foreign. Several members have remarked on the difficulties of valuing the loss of biodiversity. However, economics can help with arriving at partial estimates of biodiversity values which are useful for policy makers. One study which is ongoing and almost completed is that of the Wolong Nature Reserve, a habitat for panda bears. Estimates were made of tourists’ willingness to pay for the conservation of the habitat; the indication of willingness to pay far exceeds expectations. The panda provides a window of opportunity to look at this issue, given its popularity and its usefulness in terms of public education. Willingness to pay on the part of the public is an important variable in that it could allow China to earmark taxes for this purpose.

196. The link between poverty and environment studies is being done in two phases. The first is to look at existing aggregate data on income distribution and other socio-economic variables by county or city, and superimpose on this environmental data. This can provide a look at who benefits and who suffers from environmental degradation and resource depletion. The second approach is to look at one or two case studies involving field work in China’s western regions. The studies will then be put together in order to provide a comprehensive review of green taxation. The complexity of the work makes it unlikely that it will be completed by the Council’s last meeting of Phase II. But the report provided will lay the foundation for future work in Phase III.

197. The Economics and Environment WG has not arrived at definite pragmatic recommendations, as has been done for other WGs. This is because a lot of the recommended prescriptions, which are also recommended by the WB and ADB, are already being implemented by the GoC. But what can be put forward is how the GoC can move from policy statements to actual implementation. The WG continues to show the steps to take, for instance, in how to include environmental externalities in resource pricing by valuing those externalities.

198. References were made during the WG Co-Chairs’ Coordination Meeting to the coordination among WGs. This WG has made a decision to involve itself systematically in the work of all the other WGs. One reason is because it is important to ensure the Council’s WGs are not recommending contradictory measures in economic terms. Since doing this systematic review of other WG reports, there is a consistency in the economic analysis used by all WGs.

Discussion

199. Regarding taxation, it would be useful to add guidance about those cases where the efficiency of taxation comes into conflict with the realities of the environment - where the harm would be irreversible or unequally distributed. There does seem to be some tendency to believe that economic instruments solve everything, which is not always the case. In the case of valuation of environmental degradation, while it is difficult to estimate correctly, the option to price this at zero should be ruled out.
In considering green taxation issues, the WG might consider involving representatives of China's fiscal and monetary authorities and in particular the Ministry of Finance. They are the ones who need to be persuaded on green taxation. As we move towards thinking about the implementation of this work, it is key to get the good economic ground work into the arena of public policy formulation.

Economic tools have been especially useful in the valuation of biodiversity where what is looked at is the underlying causes of biodiversity loss. Many of those are driven by economic distortions and economic factors. There has also been discussion in the past on depletion estimates; trying to get a good handle on how depletion costs on natural resources get traced through into the macro-economics of the national income accounts and how they affect key variables such as real savings rates. This is potentially very persuasive to macro-economic managers and planners and therefore would be worth devoting attention to.

Some of the work on environment and poverty involves looking at damage functions. The WB is presently revisiting its environmental strategy over the past ten years and one area being examined is the implication for poverty, particularly with respect to public health, mortality and morbidity. This is a promising area in explaining the centrality of environmental management as an input into poverty alleviation efforts. Initial studies coming out of China and India indicate that the morbidity and mortality effects of environmental mismanagement are already enormous.

The work done by this WG is key since the GoC has been finalizing its 10th FYP and has started to increase the investment in environmental protection. Investment in the environment cannot be borne solely by the government. Pollution control needs to embody the principle of “Let the polluters pay”. Market mechanisms, for instance fees and taxation, are thought to bring in revenue that can then be reinvested in the environment. Recently, the collection of environmental taxes has been discussed between SEPA and China’s fiscal authorities. A direct question we face is the calculation of the tax base, particularly as applied to SO2 and carbon taxes. China is hoping for help from the WG on this technical issue.

The WB has already helped China with some work on the economic losses due to pollution. Chinese experts are also working on this. But the conclusion in China so far is different than that arrived at by the WB, although the methodology used was similar. It is to be hoped that the studies of this WG in this area will take this other work into consideration and synthesize all these results, ensuring your conclusions are convincing and your recommendations are accepted.

Environment’s relevance to poverty reduction is particularly key in western China. Poverty is widespread there and economic growth is a must, but the environment is also vulnerable. Clarifying the relationship between degradation and poverty is key in order to convince local governments who need most to be aware of this. It is hoped the pace of these studies can accelerate so conclusions can be released in a timely manner for implementation of the WDS.

Transportation

Prior to the submission to the Council of the WG’s annual report, Kunming municipality’s vice mayor Feng Zhicheng outlined the city’s current transportation plans. Kunming is one of the four pilot cities implementing the recommendations of the WG.
207. The Co-Chairs of the Transportation WG, Wang Yangzu and Rudolf Petersen, brought Council up to date on their progress, highlighting the following issues:

208. From the groundwork laid the previous year, the WG participants focused on six principal areas. Recommendations from the 1999 AGM dealing with urban transportation were distributed by SEPA to 35 provincial governments’ construction departments. These recommendations were also published in the China Magazine on Environmental Protection.

209. WG members visited Beijing, Dalian, Kunming, Qingdao and Shenzhen to meet with government officials in October 1999 and May 2000. Four cities were subsequently selected to become transport pilot cities – implementing key recommendations of the Transport WG. The pilot cities are: Kunming, Qingdao, Shenzhen and Dalian. The cities have prepared action plans to implement the recommendations.

210. In June 2000, representatives from the four pilot cities visited Paris, Hanover, Karlsruhe, Munich and Zurich, focusing on urban transport and the environment. Of particular interest to the Chinese delegation were the advanced public and rail transportation systems in operation in Europe.

211. The two Co-Chairs of the Transportation WG presented a paper on their work at the Urban Transport and Environment Seminar organized by China’s Urban Transport Planning Association and China’s Urban Sciences Research Association. In addition, the WG’s reports and papers were compiled and printed. Progress has also been made on the study of an Urban Transport and Environment Statistic Index System.

212. Over the past two years, work was completed on the inter-city transport study, surveying some 14 provinces and regions. Field visits were conducted of Liaoning province, Jiangsu province and Chongqing municipality; this concluded with a workshop held in Chongqing. Draft recommendations dealing with inter-provincial highway transport have been distributed to 30 provinces, autonomous regions and municipalities; their comments have been solicited and several provinces have already provided feedback on the proposed recommendations. These comments helped with revisions to the recommendations before they were submitted to Council.

213. A study of railway, water way, aviation, pipeline and integrated transport systems was made; relevant reports were presented at the Chongqing workshop. Proceedings from the workshop were compiled and published.

214. The recommendations of the WG regarding the WDS are underpinned with the conviction that transportation is a key engine of development. Overall, the WG recommends highway transport be emphasized in western regions, while not neglecting other modes of transport. It is key to have highways service major cities and mining centers. Current transport corridors should be exploited, but it may be necessary to create new ones; however, China should avoid building new expressways prior to market demand for such a mode. There should be guidelines on transport and the environment to include in EIAs of new transport infrastructure projects; attention should be paid to optimal land use as well as minimization of soil erosion.

215. Inter-modal transport should be promoted and urban planning should be consistent with a region’s transport plans. Highway plans should be made in conjunction with small and medium cities’ urban plans. Feeder roads should continue to be improved and should be subjected to better management. Capacity and efficiency of the transport system should be
enhanced, adopting more advanced road building and maintenance technology. Environmental protection should be considered in highway construction plans from the outset of the design phase. Public information on environmental aspects of road construction should also be strengthened.

216. Integration of transport in all other phases of planning is key. In initial development or urban plans, there should be an infrastructure plan in place comprising all transport modes. This is not yet the case in China. So far, there has been good cooperation with the urban centers where the WG has been active and the results of the work has also been disseminated to other provinces and cities. In the context of urban transport, the WG is preparing a booklet on pedestrian and bicycle transport since these modes are often neglected in urban planning nowadays.

217. In terms of interurban transport, highway transport and construction has to be better integrated with other modes. Better assessment work has to be done, including a look at financial instruments such as tariffs and green taxation. It is hoped there will be cooperation with the Economics WG on this.

218. There is scope for joint work with the Trade and Environment WG especially with respect to WTO impact on the automotive industry in China. With the Energy WG, there is scope for working on clean fuels for transport.

219. During earlier discussions, mention was made of China’s potential leapfrog to more advanced transport technologies such as fuel cells. Caution must be exercised. In western China, where technical skills are very scarce, the capacity to leapfrog may not be there. For the short term, it is perhaps best to draw the GoC’s attention to the environmental advantages of working on fuel quality; gas and diesel could be much improved, leading to lower emissions. In order to achieve this, the WG is preparing a paper on cleaner fuels through refinery capacity improvements, octane upgrades and sulphur content reduction.

220. In the near future, the WG will be conducting case studies on integrated transport planning and Strategic Environmental Assessment (SEA). Chinese experts will be sent on a study tour of the United States to look into inter-modal transport and rail shipping. There will also be a seminar in China on integrated transport planning. On the horizon, there is a debate looming on climate change and air transport. High growth rate in air transport is predicted to have a dramatic effect on greenhouse gases due to radiation effects at high altitude. This is something the WG should examine, both in a domestic and international context.

Discussion

221. Land use planning should precede any delineation of transport corridors. Land that is planned to be set aside for environmental conservation should not be bisected by highways or other transport corridors. This is because transportation axes bring with them people and business, which can have a more drastic impact on the environment than the transport mode itself. Rail should not get secondary status; it is an environmentally efficient way to move people and freight. In addition, public transit, pedestrian and bicycle transport should be a key focus. In privatizing public transit, it is possible that fare hikes may decrease ridership;
the Chinese government should consider that investment in public transit is good for the country because it is beneficial to the environment.

222. In considering the financing of transportation networks in western China, it is hoped the GoC will not rule out public financing, or joint public-private financing, since where population density is low, it is unlikely the transport corridor will generate enough revenue to allow for debt servicing. It would be unfortunate if the investment in infrastructure in western China were to result in high levels of indebtedness.

223. The WG is putting forward valuable strategic policies and a program of action. Transport has large impacts on cities such as noise, energy consumption and pollution. Cities in China have not been spatially planned for the increase in automotive and bus traffic that is being experienced now. Therefore it is imperative to develop public transit by developing the infrastructure and by reforming the system of public transit. Some of the changes now pursued involve dedicated lanes for buses, improved bus routes and bus stops and so on. These changes can make public transit more attractive to the rider and hence more competitive.

224. China needs more roads to deal with the increase in the number of cars. The development of roads is lagging behind the steep increase in car use. In fact, vehicle traffic congestion is becoming increasingly serious and has to be dealt with.

225. Members of the WBC have a clear understanding that we cannot continue the way we are going. New solutions are needed. WBC has started a project on sustainable mobility. Several member companies of the WBC are at the core of the project, and some of them are major investors in China – companies such as GM, Shell, Toyota, Volkswagen and others. It would be beneficial for the WG to have contact with this project so there can be synergy between the two groups.

k) Economic Planning and Environmental Protection

226. Martin Lees, the international Co-Chair of the Programme Group on Economic Planning and Environmental Protection, and SDPC’s Gan Fangqian presented Council with the group’s report, emphasizing the following points:

227. The first part of the report deals with the International Meeting on Government and Business Strategies for the Development of Environmental Industries in China. The second part of the report deals with the conclusion of the Programme on Economic Planning and Environmental Protection in China – a programme that was undertaken by the Programme Group (PG).

228. The Conference on Environmental Industries was held in Beijing in May 2000 and was organized by SEPA. There was strong representation from officials and experts from throughout China and on the international side. One innovation was a major participation by major world corporations and Chinese business people. There were 130 participants, 40 of those from Chinese business circles.

229. China needs environmental products and services, as well as trained and skilled personnel on a vast scale if it is to implement sustainable development in a practical way. In western China in particular, environmental industries are weak to non-existent. In many countries, environmental industries are a major growth sector, providing employment and
exports. In Canada, this is the third largest industry in the country. The Chinese government has included it in the 10th FYP.

230. Emerging from the conference were a few outcomes. As China moves towards a market economy, the interface between government and business is becoming critical in achieving national objectives. There is extensive international experience on incentives, targets, policy measures and so on, to nudge business in the right direction. These measures were discussed during the conference. Out of this work, the WBC has initiated the creation of a Chinese Business Council for Sustainable Development.

231. China’s success in building up environmental industries depends on international cooperation for the technologies, knowledge, skills and capital. There are trade barriers at the moment against the flow of these technologies into China; this may change following WTO accession. The areas of discussion opened during the conference could provide focus on some strategic themes to be explored during the Council’s Phase III.

232. Over the past five years, Chinese partners in the Programme Group have worked on critical issues of integrating environmental considerations into economic, investment and regional spatial planning. The SDPC was involved in initial discussions on this Programme Group in 1993. Following the allocation of funding from the EU, the GoC set up the Programme Group under the leadership of the SDPC. The main efforts and results of the Programme Group were due to Chinese inputs, with international participants assisting and reviewing. Research was conducted at Chinese universities on how the integration could best be achieved. The results of the research were presented at two international meetings. The Programme focused on three main areas over the past five years: finance and technology for the energy sector; environmental industries; conservation and development of forest resources.

233. Positive results were achieved. The procedures for organizing the 10th FYP were different from those for the 9th, in that they took much greater interest in the environmental dimensions of economic policy decisions. Environmental industries are now a visible focus and a stated priority for development during the 10th FYP. Attention was focused on the critical question of China’s policy making capacity, especially in the area of energy. There is better understanding and greater respect on the part of the international community for the work being done in China.

234. Some concrete proposals emerge from the Programme, as the Council gets ready to consider its agenda for Phase III. There should be international assistance in helping China develop a long-term sustainable energy strategy. China has identified weaknesses in its policy-making capacity, whereby economic, technological and environmental aspects of energy policy are hard to integrate for them; this would be perhaps something the Council could take part in.

235. One recommendation, relevant to the WDS and which comes from the Chinese side, is to create a policy office to supervise the integration of environmental issues in economic policy. Another point raised by the SDPC is the need for simple indicators of sustainable development for use throughout China. China is also interested in how to channel foreign funds into environmental protection and energy efficiency.

236. One underlying theme is the need for better coordination of institutions across government and between the different levels of government, so that critical issues of energy, water and forests can be addressed in an integrated way. The Council is heavily focused on
policy, but once policies are agreed upon, that is only the beginning of the problem for the Chinese government. The key is implementation, which depends on coordination and cooperation among different agencies and levels of government.

237. SDPC has been involved intimately with the development and drafting of the EIA law. A leading group on sustainable development consisting of 19 ministries has been supported by the State Council. For the first time in the 10th FYP, ecological construction and environmental protection were incorporated in the plan. Seminars and conferences held under the aegis of the Programme Group were of great help in refining government thinking on policy. Four local case studies have provided rich sources of information and lessons learned.

238. The SDPC extends its gratitude to funding agencies which supported the work of the Task Force. In considering Phase III of the Council, and given the difficulties of integrating environment and economic planning, SDPC believes that one Council WG could deal with the original sustainable development strategies that started with Agenda21. Some of this work has been initiated under a regional sustainable development program. There is one such program for the Beijing Capital Region, called Capital Eco-sphere Program, involving the planning commissions of Beijing, Hebei and SIDA as well as SDPC.

Discussion

239. Sweden, through its ODA agency SIDA, is involved in a regional sustainable development project – which is really a spin-off of the Programme Group’s work. The WGs of the Council are mostly sectoral whereas the Capital Eco-sphere program takes a more integrated approach. There is geographic, regional and local, involvement as the short paper distributed to Members outlines. Traditionally, environment degradation has its roots in poverty and population growth. Economic growth has added new pressure. Nowhere is this more evident than with respect to water resources in northern China and especially in the Capital Region. The conflicts over water will be studied, with particular focus on unsustainable agriculture practices, polluting industries, organic waste and inefficient use of water. The goal is to reduce the water-centered conflicts and develop a vision and plan for the sustainable use of water in the Region. There is opportunity for synergy with other WGs, looking at their recommendations in a practical, specific and regionally grounded perspective.

240. The European Commission has been happy with its association with this Programme Group. The Council has done lots of work over the years to develop recommendations, but the difficulty lies with pragmatic on the ground implementation. The Programme Group has helped bridge theory and practice. Integration has been approached from a practical perspective as well. The work done through the four demonstration projects has been useful in highlighting gaps at the local level in terms of policy making and enforcement capacity.

241. China values the work of this PG. Their recommendations have mostly been adopted and integrated in the 10th FYP. China is just starting to develop an environment industry. Many constructive ideas put forward by the PG will be put into practice by China.

242. The development of an environmental industry in China is not possible without the transfer of technology and foreign direct investment. In this field, it is not so much large firms that are involved as SMEs. There needs to be improvements in the legislative and administrative framework dealing with foreign SMEs investing in China. Over the past year, Germany and China have emphasized in their cooperation the issue of the development of
legislation in this area. Legislative reforms are now underway, creating a better enabling environment for foreign environmental SMEs to invest in China.

243. There is often too much focus on technology and the supply of systems and products in the discussion of environmental industries. We need more understanding of the demand side of environmental services. Companies will only invest if there is a demand for the technology and products. Demand can be created either by putting up a strong business case that reducing pollution and increasing efficient use of resources cut costs and boost profits; the other way to boost demand is through legislative means with strong enforcement. Both ways have to be pursued in order to generate demand. And without demand, there will not be investment.

244. Shell invested in Liquid Propane Gases (LPGs) in China over the past few years. However, Shell found that it was competing in the market with plants that were not operating according to standards set by government. Shell has therefore pulled out of the LPG business because competition was not on an even playing field. This makes companies like Shell and others reluctant to invest in environmentally valuable endeavours (LPG replaces coal as a cooking fuel and is much cleaner).

245. The work of the PG is now completed. And they should be thanked for the results they achieved. The recommendations put forward by the PG regarding the 10th FYP were very valuable. Most recommendations dealt with better coordination in order to pursue environmental goals, and this will be emphasized. It is expected the environmental industry will develop rapidly, growing by over 15% per annum.

ITEM 7. DISCUSSION AND APPROVAL OF THE RECOMMENDATIONS

246. With Vice-Chair Xie Zhenhua presiding, the Members were presented two documents. The first one was drafted by the Secretariat and focuses on the WDS; it is to be submitted in writing to the Chinese government. The second was drafted by Sir Crispin Tickell based on the WG recommendations; it deals more generally with China’s environment and sustainable development and is to be presented directly to Premier Zhu Rongji. Secretary General Zhang Kunmin and Sir Crispin Tickell introduced both documents to Members. During the discussions that followed, the following points were stressed:

247. In the recommendations dealing with sustainable agriculture where mention is made of wasteful use of water and fertilizers, it is important to mention specifically pesticides since the overuse of these chemicals poses serious environmental and public health risks.

248. There are good recommendations on ecological construction in the WDS draft document. It is important to conduct studies on the ability to restore damaged ecosystems and to set zones for protection. Regarding the development of science and technology in western China, the importance of satellite monitoring should be recognized. This is especially relevant in terms of monitoring watersheds such as the Yangtze and Yellow rivers. Japan has already been involved in this work with Chinese partners, and may yet fund additional research in this area.

249. In the draft prepared by Sir Crispin, there is mention of leapfrogging to clean technologies. But capacity building is needed for this to happen and this should be reflected in the recommendations. Secondly, some reference should be made for the need for due
consultation with people on major infrastructure projects which can have dramatic impacts on local populations.

250. On the WDS document, in the first item which outlines the principles underlying the WDS, an additional bullet should be added. This should read: “Steps will be taken for the technological and information empowerment of local communities, blending in traditional wisdom and technologies with frontier technologies such as information, communications, space, renewable energy and environmentally safe biotechnologies.” It is vital to bring in local populations and to use what they have to offer.

251. In Sir Crispin’s draft, in the section dealing with sustainable agriculture and more specifically pesticides, the benefits of cutting back on pesticides should be highlighted. On the passage dealing with GMOs, there is mention of a Task Force to deal with this issue. In fact, the proposal for such a Task Force was broader, including the question of converting bio-resources into economic wealth through the safe application of biotechnology. GMOs should also be considered, but in the context of bio-resources as a whole and of bio-safety.

252. Regarding energy policy recommendations in Sir Crispin’s draft, proper notice should be given to the fact that most of the new plants adding to energy capacity worldwide are actually smaller scale units, utilizing new cost effective technology and allowing for the cheaper generation of energy.

253. On sustainable agriculture and in particular GMOs, the tone is too negative given the promising and beneficial aspects of GMOs. The approach should be cautious, but some of the rewards of GMOs may hold promise for China’s large population and the document should reflect this.

254. On cleaner production, there is clearly a win-win situation for the environment and for business in reducing pollution and improving financial performance of companies at the same time. The opportunity aspect of cleaner production should be emphasized.

255. One strategic point is missing in Sir Crispin’s draft recommendations. There is no formulation of an overall overarching issue that should be underlined at the outset of the document. Implementation of these recommendations will take place post-accession to the WTO. There is then likely to be rapid inflow of foreign direct investment; if that happens in western regions, it will happen in a fragile environment and one in which we know very little about biodiversity. Therefore, there must be some concern expressed in our recommendations about these risks. This is the context that should be emphasized at the beginning of the document.

256. Regarding Sir Crispin’s draft, emphasis should be put on the participation of the private sector in planning policies. Market forces and government’s role are mentioned, but there should be a reminder that government intervention in the policy arena should be transparent and market-friendly. The government should be hearing the voices of the players in the market, namely enterprises of different sizes and different ownership structures. SMEs should be specifically mentioned, since they are traditionally in the most difficult position in terms of making their views known to government.

257. Regarding energy policy in Sir Crispin’s paper, more attention should be paid to the demand side. This is as important as the supply side, in that efficient use and conservation of energy will have an impact on the energy demanded and hence supplied.
Several confusing terms are used in the WDS recommendations draft. This presents difficulties in that these concepts are not known or understood outside of China. The first is the use of the phrase: “benign cycle of ecology”. Ecology is many things but it cannot be described as benign. What is perhaps meant is “within ecological limits”. The second wording is “ecological construction”. The exact meaning of the sentence’s context is not clear. Perhaps what is needed is to define the term, and then to clarify the meaning of the phrase that seems to equate the importance of environmental protection and ecological construction.

The present document should state something having to do with China’s existing laws and regulations pertaining to the environment, after WTO accession. All of China’s laws will have to be consistent with WTO rules and therefore this may have an impact on the environment. On the other hand, the comment made in Sir Crispin’s paper regarding the mixed and uncertain impact WTO may have in China is not appropriate. The Council should just state what it knows for a fact. It would be constructive to recommend a speed up of capacity building of government personnel to deal with WTO adjustments.

A missing theme is the massive growth in private investment in China, both domestic and foreign. Frameworks for environmental regulations, pricing and management are missing. That should be beefed up in section 6 of Sir Crispin’s paper. In the WDS recommendations, the downside risk of the WDS is missing. To encourage rapid growth usually means growth first and then fix the environment. This is a very high risk and a very high cost strategy. And the risk is exacerbated in western China by the fragility of the ecosystem and the impact of possible demographic shifts. What is needed is smart growth, quality growth with the inclusion of sustainable development principles.

In Sir Crispin’s paper, the section dealing with biodiversity deals with invasive species and forestry adequately, but misses out on the need for in situ conservation. The text currently only refers to ex situ conservation and that gives the wrong impression of what is called for.

Sustainable job creation should be pursued specifically as an objective of the WDS. In the case of the use of renewable energy in western China, it is key to build capacity of the people because this sector is labour intensive. In the references to transportation, mention should be made of the importance of early planning of public transit as a way to prevent the build-up of serious environmental problems. Lastly, the references to education and training need to be stronger.

The passages on ecological construction and environmental conservation should be merged into one paragraph. And mention should be made of the need to have proper selection of species for reforestation or restoration of grasslands and vegetation. In some cases, natural forests are being transformed into rubber plantations and that is not a desirable outcome.

Several instances of translation error were brought to the attention of Members and Secretariat staff.

There are limitations on the scope of technology, regulations and legislation to solve environmental problems. It should be emphasized that education of the public is key in changing the way people behave.

We live in the age of information. Our capacity to gather and communicate information is growing more rapidly than anything else. Information is a powerful force for
change. Environmental information could be a force for reform in China. It is suggested that a clause be added, urging the GoC to continue to expand the amount of information made public on the state of the environment in China and future trends. The passage on the need for the Council to work on water strategies in the future could be deleted.

267. Sections dealing with the restoration of farmland to forests or grasslands are weak. This is not detailed enough. It should be put in the context of restoration of ecosystems. Explicit mention should be made of the need to enclose mountains for the purpose of afforestation and species protection.

ITEM 8. CLOSING CEREMONY

268. With Vice-Chair Xie Zhenhua presiding, Vice-Chair Qu Geping pronounced the closing address on behalf of the Council’s Bureau, for the 4th Meeting of Phase II of the Council. During his remarks, Professor Qu emphasized the following issues:

269. All agenda items of this AGM have been completed successfully and the meeting is coming to a close. Chairman Wen Jiabao, in opening the meeting pronounced a key address. The WDS was discussed, the Secretariat presented its work report and the WGs, Program Group and Task Force submitted their annual reports to the Council. Participation was active and the discussions were fruitful. I have been entrusted by Premier Wen Jiabao, and on behalf of the Bureau, to thank the Members and WG participants for their contribution.

270. Premier Zhu Rongji invited Members to visit Dalian in order to see for themselves a model environment city. Model cities are a tool for the promotion of environmental protection. SEPA has set guidelines for such cities. Dalian has met those requirements and other cities have followed suit. Within a few years, 17 cities have achieved this standard and a lot more are working towards it.

271. The Council has also debated the farmland conversion program; the Forests and Grasslands Task Force has been established to advise the Chinese government on this issue. It is to be noted that the Council has become closer to the GoC and its work therefore is bearing fruit while its role is becoming more important. Premier Zhu will meet Members of the Council and Co-Chairs of the WGs, allowing for direct communication. Your recommendations and those of the WGs, Programme Group and Task Force will be key in implementing the WDS.

272. Members have acknowledged the efforts of the GoC in environmental protection. They have also pointed out that environmental protection and ecological construction are the pillars of the WDS. Members also put forward key suggestions on efficient use of water in the WDS, as well as the importance of education and capacity building. Suggestions were made regarding construction of highways and the size of cities, as well as on the selection of grasses and trees used for reforestation. All of these ideas are valuable for China.

273. The GoC will need to pay attention to:

1) better coordination of the various departments of government as well as the various levels of the administration in the WDS – guided by overall comprehensive planning;
2) Strategic Impact Assessments should be undertaken for western regions;
3) Mechanisms for implementation of environmental protection measures, especially funding and public policy frameworks, should be put in place;
4) In developing western regions, an environmental protection strategy should be put in place; it should involve the private sector.

274. The WDS is a grand strategy and a great project for China. Many details remain to be determined. Members of the Council and of the WGs have contributed their wisdom and hard work; this will have a positive impact on the WDS.

275. Next year will see the end of Phase II. It is hoped all WGs can bring to a close their activities according to their Terms of Reference. This will allow for a smooth transition to Phase III.

276. The Chinese government is incorporating Council recommendations into its operations, as was reported by the Secretary General in his work report. This shows the Council’s efforts are not in vain. The plans for Phase III are that Members should be of greater capacity, the operations streamlined and the overall work more productive.

277. The Council’s 5th meeting of Phase II will take place in Beijing from September 25th to the 27th 2001. Prior to the meeting, a field trip to western China will be organized for Council Members.

III. RECOMMENDATIONS TO THE CHINESE GOVERNMENT ON THE WDS

278. Great Western Development is a strategic trans-century plan by the Chinese Government. It will be of great significance to the sustainable development of the western regions and even all China. Due to natural, social and economic constraints, Great Western Development will be a long-term and arduous historic task, and will be faced with many difficulties and challenges. Its implementation needs to draw upon all kinds of knowledge and experience possessed by mankind.

The China Council for International Cooperation on Environment and Development recommends:

1. On the basic principles of Great Western Development
   • The comprehensive development of economy, society and environment should be promoted. Modernization construction should be pushed forward. Guidance needs to be provided for the balanced distribution of population, economic activities, cities and towns. People’s living environment should be protected and improved, and people’s living standard should be raised in general.
   • Sustainable use of biodiversity and careful utilization of non-renewable resources should be adhered to as the prerequisite for development. The required input of energy and other resources should be minimized to the greatest extent possible. Waste discharge shall be reduced and recycling should be encouraged.
• Development should be based on the characteristics and advantages of the western regions. The western regions should not simply rely on resources exportation, nor should they follow the model of large-scale industrial development of the eastern regions. Rather, they should take advantage of their rich resources, adopt the market mechanism in order to increase the value of the resources, develop their economy, and cultivate local talents.

• Steps should be taken for achieving speedily the technological and information empowerment of local communities through blending traditional wisdom and technologies with frontier technologies such as information, space and renewable energy technologies, as well as environmentally safe bio-technologies, thereby helping to create more skilled and sustainable livelihoods and jobs.

• The functioning and carrying capacity of ecology should be taken into account in the formulation of urban and industrial development plans. At the same time, attention needs to be paid to the protection of historical and cultural sites as well indigenous natural endowment.

• The regulatory role of the government should be combined with the market mechanism. The concentration should be on a few core areas and cities that may trigger or lead the development of other areas.

• The sustainable use of water resources is a key issue for the western development. Integrated water management should be strengthened for key areas such as the upper reaches of the Yangtze River and the Yellow River.

2. On development planning and environmental impact assessment

• Development should be preceded by careful planning and monitoring, in order to make sure that development achievements will not be superseded by environmental degradation. During the planning process, the various departments involved should strengthen their coordination and cooperation. The core of planning should be protection of resources & environment, rational distribution of infrastructure facilities, and development of cities and towns. All development plans and key large-scale construction projects should undertake environmental impact assessment. Scientific estimate should be made on the environmental capacity and natural resources supplying capacity in a timely manner, and focused attention should be paid to the impacts on diversity, so that western development could be based on a benign circle of ecology. Mechanisms for supervising and coordinating the implementation of plans should be established.

• Special Plans for Ecological Restoration and Environmental Protection shall be well formulated. Scientific and rational ecological and environmental targets shall be set. Concrete and practical measures should be formulated to increase government input, standardize environmental management, attract domestic and foreign capital and technology, and provide fiscal and taxation policy support, etc.

• Environmental impact assessment should be undertaken for cities, industrial zones, public infrastructure facilities, large-scale farm construction, and land development activities, etc. The planning, designing and construction of industrial zones should be based on the concept of “environmentally sound resource recycling” and “zero emission”. Importance should be attached to the construction of environmentally important
infrastructure facilities, including centralized treatment and disposal facilities for wastewater, hazardous waste and toxic waste. Joint ventures and BOT (build-operate-transfer) practice should be encouraged.

3. **On environmentally friendly economic policies**

- Integrated investment policies for sustainable development should be established. Incentives (such as tax reduction or exemption) should be created to encourage investment into sustainable utilization of resources, high value-adding industries and cleaner industries. Likewise, disincentives should also be created to prevent pollution intensive industries and industries that have been banned by investor’s home countries or prohibited by international environmental agreements from transferring into western China. Measures should also be taken to encourage all corporate companies to follow more stringent applicable environmental standards. Investors from the eastern regions should be encouraged to invest in the western regions. Effective management investment by public financial institutions should be established, and low-interest funding support should be made available to environmentally friendly development projects.

- Relevant environmental taxation reform should be implemented. Environmental taxation should be adopted as a market instrument, so as to reflect environmental cost and promote the commercialization of sustainable technologies. The pollution fee collection system and other environment related taxes could be unified into a coordinated and efficient environmental taxation management system. This reform could be integrated with market pricing system, so as to replace or improve the existing fee collection system, reduce the consumption of polluting products, and raise funds for environmental or general public purposes. The main measures could include: Levying SO2 emissions tax on coal fuel; levying coal resources tax at higher rate; experimenting on levying additional tax on petrol and diesel consumption for environmental protection purposes; levying household wastewater treatment fees in order to support the construction and operation of centralized wastewater treatment facilities; levying pollution discharge fees on all enterprises; levying water pollution tax on small sized enterprises and tertiary industries according to industry and product categories, standard emission rate and output volume; levying tax on pesticide and fertilizer in key river and lake basins so as to reduce water pollution; and in some urban areas, levying on products like plastic bags so as to reduce their use and promote their recycling. Economic incentives such as pricing of natural resources and pollution taxes should reflect regional variations in environmental costs, which in the western region are influenced by factors such as its relative poverty and low population density.

- Reform should be carried out on the property right system for resources such as land. The property right for resources like land, forest and timber should be clarified, so as to bring farmers’ initiative into full play and effectively protect resources.

- Existing and newly approved national level economic zones in the western regions should draw upon the experience and lessons gained by coastal economic development zones in the eastern regions, and formulate and implement a strategy of sustainable development of trade, investment and environment. In order to coordinate trade, investment and sustainable development policies, it is desirable to establish advisory committees on trade, investment and environmental protection under the competent economic and trade departments of the provinces where the development zones are located. Foreign enterprises in the development zones should be required to adopt applicable environmental standards, and sign voluntary agreements with the relevant departments.
so as to regulate their own environmental behavior.

• The clean development mechanism (CDM) could be utilized to promote the development of the western regions. CDM, which has been put forward by the Kyoto Protocol, provides new opportunities for the promotion of foreign investment and transfer of clean coal technologies to the western regions. CDM policies should be researched and formulated. Pilot CDM projects could be established in the western regions. This could promote the participation of the western regions in CDM and help them obtain extra funding and technical assistance under the precondition that developing countries shall undertake no obligations for reducing greenhouse gas emissions for the current stage.

4. On ecological restoration and biodiversity protection

• Enough attention needs to be paid to the ecological restoration of the western regions. Surveys should be conducted on the environmental restoration ability of the ecologically degraded areas, so as to assess and distinguish between human activity zones and nature protection & restoration zones in a scientific manner. Measures should be taken to ban or restrict logging and grazing activities, restore vegetation, and ensure water supply. Relevant laws and regulations should be established for such purposes. Illegal land use should be strictly banned in nature reserves, scenic and historical sites, water source areas, natural forest areas and grassland areas.

• Ecological environmental construction* should become a long-term policy. Unified plans and long-term & stable ecological environmental construction and economic compensation policies should be formulated as soon as possible. Ecological construction should be combined with the improvement of people’s living standard. The traditional exploitative production patterns should be changed. In light of different local conditions, ecological construction should be implemented on an area-by-area and phase-by-phase basis so as to improve ecological environment.

• In converting steep arable land back to forest and grassland, measures such as “closing hillsides (to livestock grazing and fuel gathering) to facilitate afforestation” should be adopted in order to restore ecological systems. Attention needs to be given to rationalizing the ratio between forest and grassland and the ratio between different types of forest. The species of trees and grass for plantation should be carefully chosen so as to comply with the climatic and ecological characteristics of the various parts of the western regions. Local species should be preferred. Species with stronger adaptability and greater economic & environmental benefits should be selected for popularization and demonstration. Non governmental organizations and volunteers should be encouraged to play their role in reforestation, plantation and recycling.

• A rational water distribution mechanism should be established for the various catchments as soon as possible. Water saving should be promoted, and water saving agriculture and ecological agriculture should be developed. The water resources of Yellow River, Black River (Heihe) and Talim River should be distributed in a scientific and rational way. Greater support should be given to the economic structural transformation of resource-dependent cities and the environmental protection of mines. Environmental treatment and land reclamation should be well implemented for mining areas.

* Ecological construction: a direct translation of a Chinese concept that is similar to ecological restoration, but may also be understood as taking ecological protection, restoration and amelioration all together.
Development of energy and mineral resources in the Loess Plateau must be closely linked with ecological construction. Part of the revenue from development activities should be used as ecology compensation fee in favor of environmental improvement. Local residents should be allowed to participate in various kinds of energy development activities so as to facilitate the process of industrialization and urbanization.

Water conservation functions should be restored for the upper reaches of China’s major rivers. This is important for the protection of endemic biodiversity. Permanent funding sources should be established in order to ensure the sustainability of such plans. The construction of ecological forests should be emphasized. Ecologists should be involved in the planning and implementation of ecological engineering projects.

Domestic legislation should be strengthened to control the invasion of alien species. Large amount of imported alien grass species will definitely cause irreversible destruction to and impact on China’s unique biodiversity. For water and soil erosion control projects and plantation projects, the use of local species rather than alien species must be emphasized.

5. On sustainable use of energy

It is important to make a rational choice of energy supply bases and energy transportation channels. Precautionary measures should be taken against acid rain and fluorine pollution caused by the burning of coal with high sulfur content and high fluorine content. Areas that use wood fuel should shift to new energy sources such as methanol, dimethylether (DME) so as to prevent increased logging as a result of population growth. Biomass energy resources are rich in some western regions, therefore modern methods (such as low tar gasification) should be adopted to utilize biomass. Large-scale experimental solar energy system should be set up. Efforts to couple the use of renewable energy sources with the manufacturing of related equipment in the western region should be encouraged, given the contribution they would make to the development of domestic technology and the generation of employment.

Xinjiang and Inner Mongolia have rich wind resources (accounting for more than 50% of the national total), and should become an important component of “West to East Electricity Delivery Plan”. Renewable portfolio system (RPS) should be put forward at the national level to require that power supply departments must have a certain percentage of “green electricity” (i.e. electricity generated by renewable energy) in their power supply. The concession approach, which has been successfully used by China Marine Petroleum and Natural Gas Company, should be adopted, and the market mechanism should be introduced, so that the monopoly of power departments could be broken, and that wind power generation could enter into the “fast lane” of development.

Energy development strategies for Western China should maximize local benefits. Natural gas development strategies should target application of the LPG byproduct to displacing coal and biomass in the rural areas. High value-added products should be emphasized when exporting fossil energy to Eastern China. Poly-generation strategies should be adopted to get clean liquid fuels, chemicals and electricity.

6. On pollution control and cleaner production

The advantages of scientific and technological progress should be made best use of. High-
tech industries should be developed. Extensive industrial growth pattern, which is characterized by high input, high consumption and low output, should be transformed. The old practice of “taking treatment measures only after pollution has already occurred” and “end-of-pipe treatment” should be avoided. In other words, the traditional industrial stage characterized by heavy environmental pollution should be leapfrogged. Efforts need to be strengthened on the prevention and control of pollution caused by industrial wastewater, urban household wastewater and agricultural non-point source pollution, in order to tackle water shortage problems of the western regions as a result of water pollution, and to realize innocuous treatment, utilization and recycling of wastewater to the greatest extent possible. Strong measures should be continued to control acid rain and SO2 emissions in the southwestern regions.

• In order to protect the water quality of the Three Gorges Reservoir, construction of urban wastewater treatment plants and urban garbage disposal plants in the upper reaches of the Yangtze River should be sped up. In order to promote the prevention and control of water pollution in the northwestern provinces and improve the water quality of the Yellow River and its tributaries, Planning on the Prevention and Control of Water Pollution in the Yellow River Basin should be formulated as soon as possible.

• The program on cleaner production demonstration cities and industries has achieved preliminary results. State Economic and Trade Commission (SETC) and State Environmental Protection Administration (SEPA) should conduct surveys and research to summarize the experience of the 10 cities (such as Taiyuan) and the 5 industries (such as chemical industry) which have participated in this program, and disseminate it to other areas. While the Cleaner Production Law is being formulated, the relevant departments should carry out assessment and make adjustment on the existing policies, and adopt cleaner production as soon as possible as a core requirement for policies related to industrial structure transformation, technological retrofitting and renovation, total amount control of pollutant discharge, and environmental quality management, etc. A national cleaner production database, cleaner production indicator system and cleaner production network should be established and updated.

7. On transportation infrastructure construction

• The development of transportation in the western regions should focus on road transportation, and the importance of rail transportation should be emphasized, while sufficient attention should also be paid to other transportation modes. Importance should be attached to the design and optimization of multi-modal transportation system. Key cities and mining areas should serve as centers, from which road transportation could radiate outward and gradually form a network that connects cities, mining areas and other areas.

• Existing transportation facilities should be made full use of, and should be upgraded and improved on a gradual basis. In constructing new roads, the transportation load should be taken into full account. Expressways should not be constructed too quickly and in too large numbers. In accordance with the principle of “stressing on prevention and giving priority to protection”, environmental impact assessment should be conducted in a serious manner for road construction. In southwestern regions, land use for road and rail construction should be planned carefully so as to prevent new water and soil erosion. In northwestern regions, ecological protection should be given enough attention during road construction and repair so as to prevent desertification and stabilize sand.
• Protection of ecological functions needs to be strengthened during transport construction. Special economic policies should be adopted for water and soil eroded areas. Local governments could be made responsible for planting green belt along the roadsides. Active participation of local residents in this process should be encouraged according to the principle of “whoever takes treatment measures should benefit”. Road construction departments should strive to save land resources.

• Balanced urban and traffic planning should be made, taking into account the projected needs for mobility. State of the art technologies should be utilized for public transportation systems.

• The western regions should develop tourism, and attract domestic and foreign tourists.

8. **On development of sustainable agriculture in the western regions**

• The implementation of projects that have both ecological and economic benefits should be given priority. Emphasis should be put on fruit industries, animal husbandry, production of economy crops with distinctive local characteristics, and ecological agriculture, etc. Certain incentives are needed to reduce risks inherent in adoption of new minimum and zero-till land management.

• Input into grassland protection and restoration should be increased. Development of animal husbandry should be sped up. Careful assessment needs to be conducted for grassland resources, so that the production system could be improved and adjusted according to regional natural characteristics. The percentage of artificial grassland should be increased, and the carrying capacity of grassland should be promoted. Demonstration bases for grassland management and applied research projects should be established. Relevant policies regarding grassland use and contract system should be reformed.

• Conversion of steep arable land back to forest and grassland and restoration of grassland in the Loess Plateau should be incorporated into the 10th Five-Year Plan. Extension of plantation should be restricted so as to reduce farming pressure and increase vegetation coverage. Land property rights should be clarified. Farmers should be encouraged to invest more in land. Credit services in the rural areas should be improved in a proactive way. Development of non-agricultural industries should be promoted.

9. **On the development of science, technology and education in the western regions**

• Governments at all levels should increase their scientific and technological input into ecological environmental construction and protection, should proactively support domestic and foreign enterprises, the society and experts to research and develop advanced and applicable technologies in the western regions, and should promote the dissemination and application of such technologies. The development of human resources should be promoted for the western regions. Input into education should be increased. Education and training of the population should be increased.

• Special efforts should be made to upgrade and extend the higher education and the vocational training systems in key cities and areas of western China. Only by cultivating human capital can economic growth be accelerated in ways consistent with the objectives of sustainable development. Efforts to promote dissemination of information and communication technologies in western China should be encouraged, with an aim to enable an increasing number of people to use the internet. Demonstration projects in
distant learning using the internet should be strongly supported.

- Satellite monitoring on the state of natural degradation should be carried out. Analysis on the cause and impact of “sand storms” and quantitative analysis on the environment of watersheds in Yangtze and Yellow river basins should be conducted, so as to provide support for policy-making and planning. Monitoring and forecasting should be strengthened for natural disasters such as sand storms.

- A monitoring system for ecological environment should be established as soon as possible. Monitoring experts and equipment should be in place to promote the quality of monitoring on resources, and ecological & environmental change in the western regions. As an important basis for the formulation of environmental quality standards, scientific assessment and precautionary control measures should be carried out on the health hazards caused by environmental pollution.

IV GENERAL RECOMMENDATIONS OF THE COUNCIL TO PREMIER ZHU RONGJI

279.

The Fourth Meeting of the Second Phase of the China Council for International Cooperation on Environment and Development took place in Beijing from 31 October to 2 November. This was the ninth time that the Council had met, and, as on previous occasions, it ventures to make recommendations to the Chinese government.

Over the years, the Council has expanded the scope of its activities, with eight Working Groups and two Task Forces, and has increasingly shifted its work from the general to the specific. This is partly because the linkage between environment and development has been widely accepted in China as elsewhere. A healthy environment is a fundamental resource for all human society, and the principles of sustainable development enter into all fields, from social and economic policy to the educational system and regional planning.

On this occasion, the Council was invited to give particular focus to plans for the development of western China. In doing so it did not attempt to work out a specific regional policy for western China, but rather to adopt a regional approach within the framework of environment and development policy as a whole. It took account of the fragility of the western Chinese environment, and relative lack of knowledge about it.

The Council stands by the previous recommendations it has made, particularly on the central importance of policies which reconcile protection of the environment with social and economic development, and confirms the need for effective coordination of such policies at all levels, whether national, regional or local.

Attached to these recommendations is a detailed annex by the Secretariat on the problems of western China, and a strategy for dealing with them. Also attached are the reports of the various Working Groups. The Council’s broad recommendations now follow.

1. Environmental economics should be applied in all parts of the planning process.

The place of environmental economics in a socialist market economy is critical. Although it is easier said than done, governments must determine true costs, covering such issues as
environmental damage and depletion of natural resources, and ensure that prices take due account of them. Market forces are indispensable but they must be brought within the framework of the public interest. Within this framework there are many possibilities for partnerships between the public and private sectors, including small and medium sized enterprises. For their part governments should use economic instruments, including tax incentives and disincentives, across the field, and so far as possible, avoid perverse subsidies.

In the case of western China, the Council recommends that such policies should take account of local circumstances, in particular the fragile environment, climatic extremes, low population density and the relative poverty of the region. The poorest members of society may need at least temporary protection from the impact of reforms.

2. **Economic planning and environmental protection should be more closely integrated.**

With a growing population and rising living standards, pressure on the environment is likely to increase. A high priority is the rehabilitation as well as the protection of the environment, and this needs better recognition in the planning process. So does the growth of environmental industries, which are a major source of wealth and employment in other countries.

The Council recommends fresh efforts to coordinate the work of institutions, in particular Ministries in central and provincial governments, so that all aspects of policy can be brought together and seen in terms of each other. Over the next ten years, the Chinese economy may well double in size, and its success requires far reaching coordination of energy, transport, industrial and agricultural policy, with overriding respect for the environment and comprehensive legislation to give it full effect. Nowhere is this more necessary than in western China.

3. **Energy policy should have high priority.**

Demand for energy is constantly increasing, and supply has difficulty in responding. So far coal, which is abundant and easily available, has been the primary source, and this will continue. But there are heavy environmental penalties. In both the short and long term the introduction of new and cleaner techniques for extracting energy from coal – in particular coal gasification – is essential. In the meantime measures are already in train to cope with air pollution and acid rain caused by combustion of coal with high sulphur content. There are good prospects for poly-generation whereby low cost chemicals, clean liquid, gaseous fluids, heat and electricity are obtained from coal and natural gas. Of increasing concern is the problem of increasing atmospheric carbon, which must be seen in the context of climate change. Here the possibilities of carbon sequestration are already opening up, and it is in China’s interest to join with other countries in promoting what has been called the low carbon economy.

The development of other energy sources and technologies is an equal priority. Among them are natural gas, hydrogen and photovoltaics for industrial as well as transport purposes. Worldwide there is increasing interest in small scale electricity generation, and over a quarter of new annual investment in generation capacity comes from units of ten megawatts or less. Of particular importance in rural areas such as western China is biomass technology, where more research is needed to improve energy transformation. Local generating systems from photovoltaics would give greater local self-sufficiency, and reduce costs arising from dependence on extension of the grid.
For western China, wind energy resources (accounting for half the national total) should help to meet energy demand not only in the west but elsewhere in China. Ambitious Renewable Portfolio Standard (RPS) policies should be put forward at the national level to ensure that power supply departments include a percentage of green electricity (i.e. generated from renewable resources) in their supplies, either self generated or purchased.

4. **Sustainable agriculture is another priority.**

There are four broad issues. The first is over use of pesticides and the need for a national strategy for integrated pest management. There is clear evidence that farmers use more pesticides than they need, and that reduction in pesticide use can be lowered without damaging rice, cotton or other crop yields. It can also be of direct benefit to crops. In this area government departments seem to play conflicting roles in the regulation, production and sale of pesticides. Excessive pesticide use can lead to health problems, waste farm resources, and damage water quality with effects on meeting drinking water standards and fish production.

The Council believes that existing national food security policy needs reconsideration. The effect of current regulations is to limit the internal grain trade to no good purpose, and to cause grain to be produced on land not suitable for the purpose. Now that food can be distributed without difficulty throughout China, the main constraint is not lack of grain but of low farmers’ income in different parts of China.

Although there has been some progress in agricultural management, some unsustainable practices continue, for example soil erosion, burning of crop residues and waste in use of water, fertilizers and pesticides. The Council recommends a new look at the whole subject.

Last there is concern over the introduction of genetically modified organisms. Biotechnology has many positive aspects, and its applications have great potentialities. But although no ill effects have so far been detected on human health, they raise serious environmental issues, which have yet to be resolved. The Council recommends caution in the use of genetically modified materials until greater understanding of them is achieved. It is proposing to set up a Task Force to enquire further into how the rich resources of China can be converted into economic wealth through the application of biotechnology.

5. **Biodiversity should be cherished.**

China has unique biological resources which still seem to be undervalued. While destruction of topsoils and forests, and soil erosion are visible to the naked eye, the impoverishment of the natural resource base, and the organisms within it, fail to attract the public and political attention they deserve. Diversity of crop species and the micro-organisms which support them are of fundamental importance. Conservation in gene banks, arboretums and botanical gardens as well as farm conservation methods adopted by farming families need strengthening.

The good management of land, water, fauna and flora, and forests is essential for sustainable agriculture. The increasing demand for grain for livestock production as population and living standards rise underlines the importance of healthy agriculture in China.

Conservation or restoration of grasslands and forests is already under way. But expert advice is always needed on the appropriate treatment to be used. Indeed environmental impact assessments are as necessary for conservation and restoration as they are for new urban and
industrial development, particularly in such vulnerable areas as western China.

The Council draws particular attention to the following points:

• On the international side, China has responsibilities under the Convention on Biological Diversity, and the Cartagena Protocol on Biosafety. The enormous wealth of Chinese plant species calls for particular attention in their exploitation for human purposes. China should enter into biopartnerships with national and international companies. It should also develop guidelines for such partnerships based on prior informed consent and sharing of the benefits.
• There is an opportunity for classifying land into conservation, restoration and sustainable and intensified use areas. Genetic gardens might be created in certain areas where both native and introduced food and medicinal plants could be grown and evaluated.
• Efforts to enhance in-situ conservation of biodiversity through effective management of existing and new protected areas should be undertaken.
• In all environmental impact assessments, the biodiversity dimension should be included and fully respected.
• There are particular dangers arising from invasive species which might do harm to native ecosystems. There is also a potential danger arising from incautious use of genetically modified organisms.
• There is widespread ignorance of the importance of biodiversity, and the need for better public understanding of the issues. In promoting such understanding, it is important to use local knowledge and engage the interest and support of local communities.

6. **Cleaner industrial production and control of pollution need further encouragement.**

The Council makes three main points.

• Cleaner production and pollution control go hand in hand with environmental benefits. They give many opportunities for more efficient and profitable production as has been well shown elsewhere. Failure to adopt them can carry heavy penalties, which in future could become heavier, with implications for human health and impacts on ecosystems generally. Different pollutants can combine to have serious consequences.
• We need to know more about water pollution in river basins, and how best to protect aquifers.
• Demonstration projects bringing together public and private enterprise might be made to show what can be done in specific areas, perhaps in a Chinese province or region. Western China might provide the opportunity for showing what might be done under careful management.

In the future work of the Council, more weight should be given to industry, and greater business representation on the Council would be welcome. There is already a proposal by the China Enterprises Confederation for a Working Group on Sustainable Industrial Development which would have wider scope than the existing Working Groups on Cleaner Production and Pollution Control.

7. **Integrated transport policy is another priority.**

China is no different from any other country in needing an integrated transport policy in which the advantages and disadvantages of different modes can be weighed and judged against each other. As the number of private cars increases, so does the need for better and
more reliable public transport. Prices for such transport, whether of people or freight, should reflect the real social, economic and environmental cost. Throughout strict environmental standards need to be applied. Particular attention needs to be given to planning of urban transport systems to respect local circumstances.

This has direct application to western China. In some cases, railways may be of more value both for freight and passengers than roads. In others, roads may be required, but in this case upgrading of existing roads, and building of feeder roads rather than expensive new expressways may be the more desirable option. To minimize the impact of new transport systems, rail and roads can often be laid in parallel.

Energy planning for cities needs to take account of pollution control and development of transport. Pilot studies are necessary to cover public and private transport systems, and eventually limitations on the use of private cars.

Again, public understanding is essential. Pedestrian areas and use of bicycles in relatively small communities may be the best mode of personal transport, and no social stigma should be attached to them.

The costs of aviation also need environmental assessment. At present, worldwide, aviation has a hidden subsidy in that aviation fuel is not taxed in the same way as fuels for surface use. China may wish to consider joining in an international effort to correct this anomaly.

8. More work is needed on the implication of Chinese membership of the World Trade Organization.

Chinese entry into the World Trade Organization will carry additional obligations for an improved environmental management system, and China will have to adjust some of its investment and trade policies accordingly. This may serve to attract new investment to western China and elsewhere. Chinese experience in eastern coastal development zones could be of value in shaping better investment policies in designated state-level zones in western China. Trade, investment and sustainable development need to be more tightly linked. China could profit from the experience of other countries in this respect.

At the same time the Council recognizes that the role of environment within the World Trade Organization is far from clear. There are risks of conflict between the World Trade Organization and the multilateral environmental agreements, and a choice may need to be made between bringing the environment into a more central place in the World Trade Organization or creating some new organization of equal standing to manage the issues.

So far as western China is concerned, the Clean Development Mechanism under the Kyoto Protocol may offer significant opportunities for bringing in foreign capital and accelerating technology transfer, particularly in the field of energy.

The Council commends the papers and recommendations made by the individual Working Groups and Task Forces. It also draws attention to certain broad strategic considerations, first with regard to western China:

• In the development of western China, careful urban planning, covering all aspects of urban life, will be essential if mistakes made elsewhere permitting urban sprawl and loss of community are to be avoided. So far as possible, new towns and cities should have a personal dimension and be of manageable size.
• Environmental impact assessments will be essential. They should be followed by careful monitoring of the outcome of development.
• The importance of education and training facilities in what are still relatively poor communities cannot be exaggerated. Better public understanding of change together with respect for cultural diversity (and use of local knowledge in such fields as medicine) are likewise vital. Local communities must feel themselves to be associated with the development process, and in some sense to exercise ownership over it.

More generally:

• China needs to play a full part in international negotiations on such issues as climate change, and to ensure that environmental considerations are taken properly into account. China also needs to work out the regional impacts of possible changes in weather systems and rises in sea level. In tackling the greenhouse issue, it is important to take account of emissions of methane as well as carbon dioxide.
• China enjoys good governance but it needs to review some of its environmental legislation and to do more to enforce it.
• Full consultation at all levels, including that of ordinary citizens, is essential. In this respect information about environmental conditions can be a powerful force for reform. The Council urges the Chinese government to expand the amount of publicly available information about environmental conditions and trends.
• As before the Council underlines the need for the Chinese government to leapfrog over the mistakes of other countries, protect its unique environment and culture, and increasingly make its own distinctive contribution to sustainable development.

V. MEETING WITH PREMIER ZHU RONGJI

a) Council presentation:

280. During the meeting with Premier Zhu Rongji, several Members of Council addressed the Premier and stressed the following issues:

281. Members of the Council are impressed with China’s progress in the area of environmental protection. In particular, they notice that public investment in the environment is higher than ever under Premier Zhu’s leadership. There is progress on environmental legislation. SEPA now has the status of a ministry. Council Members are also gratified that many of the recommendations they made to the GoC over the past years have been taken seriously and in some cases implemented.

282. The WDS represents a massive investment in order to promote economic growth, but this will happen in a fragile environment susceptible to soil erosion and other forms of environmental degradation. There is a need for comprehensive application of EIAs and for the establishment of an early warning monitoring system, so that appropriate and timely mitigation measures can be taken if needed.

283. In discussing growth strategies, it is sometimes easy to lose track of people. The local populations should be at the center of the WDS. Education, training and capacity building should be supported. Participatory approaches should be adopted to ensure local involvement; this is important as western China is home to minority peoples.
284. 2001 will be the Council’s final year for Phase II. There seems to be a general enthusiasm for a Phase III and CIDA would support this effort. Were China to indicate its willingness for Phase III, CIDA is prepared to make a financial contribution in support of the continuation of the Council’s work.

285. Both in a general sense and in the context of the WDS, we need to keep in mind the role of the government, the role of the private sector and the role of the citizen. Government sets the framework for policy, using appropriate economic instruments. For the WDS, the GoC needs to do careful planning for transportation, emphasizing railways and the modernization of feeder roads rather than highway construction. Conservation of water and energy resources will be key. The role of the private sector is to work within the framework set by government, emphasizing implementation of such measures as cleaner production, and investing in responsible development. The role of the citizen depends on education and comes into play in consultations with government.

286. Environment is now part of the mainstream of international discourse. The world has an interest in China’s performance on environment. And China also depends on world action, since it is vulnerable to climate change and sea level rises. It is hoped China will take a lead role on the world scene with respect to environmental issues.

287. The interests of minority peoples, numerous in western China, should be taken into account. This is part of the cultural heritage and human diversity of the region.

288. China, in choosing technologies for transportation and energy, should be thinking about leapfrogging to some of the options that are most realistic and promising, such as the use of fuel cells.

289. The western region is home to most of China’s poor population. In all measures devised to address economic development and environmental protection it is important to ensure the livelihood of the poor is protected and their quality of life improves.

290. China is facing a critical period as it poises to launch a major development effort in the western regions. With accession to WTO complicating matters, China needs capital to support its development program. This underlines the need for careful planning, with attention to biodiversity protection and the people of the region. It would be a shame for China to pay twice: the first time for development and the second to clean up the damage caused by the development.

291. There needs to be a strengthening of capacity in the energy sector, in order to allow China to integrate economic policies and environmental protection. Environmental industries are key to China’s future growth and to the achievement of sustainable development. There needs to be better coordination between all stakeholders in the forestry sector in order to ensure successful reforestation and restoration of grasslands.

292. WDS should lead to the creation of jobs, therefore foreign and domestic investment in the region is critical. The legislative and administrative frameworks to encourage investment have to be reviewed. It is also important that China consider the western regions as part of the whole in terms of environmental issues. There cannot be two different standards.

b) Premier Zhu Rongji’s response
293. The recommendations of the Council – those submitted in writing and the points that have been made here - will be taken seriously. Minister Xie will ensure that all relevant documents are received by the government. The GoC is grateful to Council members for their work over the years.

294. Environmental conservation and sustainable development have become increasingly important to China. Understanding has deepened and we have witnessed a significant increase in investment in this area – it stands now at record levels. It is my view that we stand at the threshold of the best opportunity to push for environmental protection.

295. In the past, this was not emphasized because environmental protection was not understood. We should have done more. But we were facing grain shortages – this explains why so much land has been developed for farming, causing tremendous damage. Currently, we have more than enough grain, in fact we have surpluses. It is feasible for us now to restore some of the farmland to forests and grasslands.

296. Our economic development has reached a stage where we can invest in environmental protection and we can implement sustainable development. There is still a long way to go.

297. Over the past year, Beijing suffered from severe sandstorms due to soil erosion in China, but also in Mongolia and in Siberia. The sand particles even reached as far as Korea, Japan and even Hawaii. China is now implementing measures to resolve this problem, even though this is difficult to remedy. We will need the Council’s assistance in this regard.

298. When I last met with the Council a year ago, I mentioned Beijing’s air pollution levels. Now, great progress has been achieved. I am sure you can notice the change. Beijing is bidding to host the 2008 Summer Olympics. I am confident of Beijing’s success. Of course our environment will not be perfect in eight years, but Beijing will be comparable to other cities. So when people mention our sandstorms, I hope Council Members will put in a good word for us.

299. I hope to see Council members come back every year over the next eight years, witness our progress and keep submitting your suggestions. I have confidence that in eight years, Beijing’s air will be as clean as Sidney’s.
Appendix

List of Documents for the 4th Meeting of Phase II of CCICED

1. Agenda and Programme
2. CVs of new Council members and WG co-chairs
3. Introduction to the Implementation of the Great Western Development Strategy in China -- keynote speech for the general debate on “Environmental Protection and Great Western Development”
4. Relying on the Advancement of Science and Technology, Realizing Sustainable Development in the Western China -- Deng Nan, Vice Minister of Science and Technology
5. Follow the Road of Developing Green Mining Industry -- Shou Jiahua, Vice Minister of Land Resources
6. Road Development and Environmental Protection for Western Development -- Hu Xijie, Vice Minister of Communications
7. Conservation and Utilization of Soil and Water Resources in Western China -- Zhang Jiyao, Vice Minister of Water Resources
8. Major Tasks of Environmental Protection of Tenth Five-Year Plan of China and Counter-Measures of Environmental Protection in the Development in Western Part of China -- Zhu Guangyao, Vice Minister of State Environmental Protection Administration
9. General Planning to Facilitate the Ecological and Environmental Development in the Western Region -- Li Yucai, Vice Administrator of State Forestry Administration
10. National Programme of Converting Arable Farmland to Forests and Grassland: towards the Vision of Creating Sichuan Province as a Ecological Shelterbelt for the Yangtze River -- Yang Chonghui, Vice Governor of Sichuan province
11. Strengthening Environmental Protection is Fundamental for Gansu Province to Implement the Strategy of Developing China’s Western Regions -- Han Xiuguo, Vice Governor of Gansu province
12. Ecological Protection and Conservation Act as the Vital Base in the Strategy of Developing Western Regions -- Hao Yidong, Vice Governor of Inner Mongolia Autonomous Region
14. Work Report by the Secretariat -- Zhang Kunmin, Secretary General of CCICED
16. Integrated Resource Management and Sustainable Agriculture Development in the Red Soil Area of South China -- Work Report by the WG on Sustainable Agriculture
17. Integrated Resource Management in the Red Soil Area of South China -- Proceedings of the Annual International Workshop of the WG on Sustainable Agriculture
18. Annual Report by the WG on Pollution Control
19. Latest Progress on the Project of “promotion of Cleaner Production Demonstrative Provinces and Cities” -- Work Report by the WG on Cleaner Production
20. Fourth Report (Phase II) by the WG on Biodiversity
21. 2000 Annual Report to CCICED by the WG on Trade and Environment
22. Strategies for Trade Liberalization in Environmental Services in China -- Background Paper by the WG on Trade and Environment
23. Prospects of CDM for Promoting Sustainable Development in China -- Background Paper by the WG on Trade and Environment
24. Improve Outer Packaging of Export Goods for Sustainable Growth of China’s Foreign Trade -- Background Paper by the WG on Trade and Environment
25. APEC Trade Liberalization and China: Coordination of Environmental and Trade Policies -- Background Paper by the WG on Trade and Environment
26. Integration of Investment and Sustainable Development in Selected Chinese State-level Development Zones -- Background Paper by the WG on Trade and Environment
27. International Perspectives on Clean Coal Technology Transfer to China -- Background Paper by the WG on Trade and Environment
29. Kunming “Century Green Action”: the Action Programme for Kunming to Improve Its Urban Transportation and Environment -- by the government of Kunming city
30. Annual Work Report and Recommendations -- by the WG on Environment and Transport with additional statement by co-chair Rudolf Petersen
31. Integrated Pilot Programme on Urban Transport and Environment: Paper Collection -- by the WG on Environment and Transport
32. Inter-Urban Transport and Environment Workshop: Proceedings by the WG on Environment and Transport