



World Meteorological Organization

REPORT OF THE SECOND WMO CONFERENCE ON WOMEN IN METEOROLOGY AND HYDROLOGY

Geneva, 24–27 March 2003



EXECUTIVE SUMMARY

The Second WMO Conference on Women in Meteorology and Hydrology was held at the Headquarters of the WMO Secretariat in Geneva from 24 to 27 March 2003. The main objectives of the Conference were: to review the current situation as regards the participation of women in meteorology and hydrology; to review progress since the WMO Bangkok Meeting on the Participation of Women in Meteorology and Hydrology in 1997; to develop benchmarks to measure future progress; and to develop strategies to increase the participation of women in the activities of WMO and in the work of National Meteorological and Hydrological Services (NMHSs). The Conference also considered the gender sensitive aspects of the activities of NMHSs such as the application of climate information by rural women and the special roles women play in water management and disaster response.

The Conference reviewed and reaffirmed the recommendations of the 1997 Bangkok meeting and stressed the need for their implementation and for accountability. To advance that objective, and to further promote the participation of women in meteorology and hydrology and in WMO activities, the Conference agreed that the following actions should be taken by women professionals, and in particular, participants to the Conference:

- Women professionals to promote and participate in the process of career development through formal and informal mentoring, guiding and counselling activities.
- Participants to brief the Permanent Representatives of their countries prior to Congress on the recommendations and outcomes of the conference.
- Participants to work continuously to promote awareness of results of the conference within their own institutions/organizations/countries.
- Participants to form regional/sub-regional networks to exchange ideas, experiences and policies. These networks could also be used to allow participants to share information with other countries within their region not present at the conference.

The Conference urged NMHSs, Technical Commission and Regional Associations and the Permanent Representatives to take the following actions:

- NMHSs to establish and support gender focal points on meteorology and hydrology in each country.
- Regional Associations and Technical Commissions to appoint and support gender focal points from among women with appropriate expertise.
- Regional Associations and Technical Commissions to report regularly on progress on gender issues to Congress/EC.
- Permanent Representatives to make regular reports on gender issues at Regional Association meetings.
- Permanent Representatives to ensure that information related to career opportunities and development is made available in particular to their female staff.
- NMHSs to take special actions to retain young female professionals, for example, by offering exchanges, secondments, and special assignments.
- NMHSs to consider establishing national associations of women in meteorology and hydrology with a view towards the eventual formation of an International Association of Women in Meteorology and Hydrology.

The Conference recommended that the WMO Secretariat take the lead on the following actions:

- Establish a WMO gender expert position to monitor progress, analyze gender issues within WMO and assist in the implementation of actions recommended by this conference. The gender expert should be charged, among other things, with developing gender sensitivity training modules for use at the WMO Secretariat and in NMHSs.
- Establish an advisory panel to the Executive Council on gender issues, which should be composed of the WMO gender expert and gender focal points from Regional Associations and Technical Commissions. The panel would be tasked amongst other things, to consider what mechanisms might be needed in the future to advance gender equality.
- Include gender issues as an item in the agenda of Congress.
- Collect gender-disaggregated statistics on a regular basis from its members and compile reports on what Members have done to advance the recommendations of this conference and to identify any barriers to progress.
- Develop terms of reference of national gender focal points.
- Encourage Permanent Representatives to include women as members of delegations to WMO meetings, conferences, training programs, etc., by adding explicit language to that effect on nomination forms.
- Continue to promote, develop, and make available distance learning (awareness and training) modules, including those leading to degree programmes offered through accredited universities.
- Make the material from the Geneva Conference available on the WMO website on women in meteorology and hydrology.
- Make available funds to enable the actions recommended by this Conference to be implemented.

REPORT ON
SECOND WMO CONFERENCE ON
WOMEN IN METEOROLOGY AND HYDROLOGY

Geneva, Switzerland, 24-27 March 2003

INTRODUCTION

1. The Second WMO Conference on Women in Meteorology and Hydrology was held at the Headquarters of WMO Secretariat in Geneva from 24 to 27 March 2003. The main objectives of the Conference were: to review the current situation as regards the participation of women in meteorology and hydrology, since the WMO Bangkok Meeting on the Participation of Women in Meteorology and Hydrology in 1997; to develop benchmarks to measure future progress; and to develop strategies to increase the participation of women in the activities of WMO and in the work of National Meteorological and Hydrological Services (NMHSs). The Conference also considered the gender sensitive aspects of the activities of NMHSs such as the application of climate information by rural women and the special roles women play in water management and disaster reduction. There were 134 participants from 101 Members of WMO and 4 representatives from International Organizations. The list of participants is shown as *Appendix I*.

2. The Conference was opened by **Prof. G.O.P.Obasi, the Secretary-General of WMO**

ADDRESS BY PROFESSOR G.O.P. OBASI

3. In his address, the Secretary-General recalled the conference organized by WMO for women in meteorology and hydrology in Bangkok in 1997. He emphasized that the present conference was not only to review the progress made since the Bangkok meeting but that its major undertaking was to explore various avenues and opportunities provided by advances in technology as well as the use of networking and mentoring in meeting the challenges facing women in advancing their careers in meteorology and hydrology.

4. The Secretary-General outlined some of the difficulties arising mostly due to cultural and social norms requiring women to combine family and professional responsibilities. These proved especially important in cases of operational services requiring shift work.

5. Prof. Obasi referred to the global survey conducted in 2001 on the participation of women and men in the work of WMO. He noted that the key conclusion of the survey indicated some small incremental increases in the percentages of the participation of women in WMO activities compared to the results of the first similar survey conducted in 1997.

6. The Secretary-General stressed that in the WMO Secretariat, the policy of equal opportunity in obtaining positions and promotion was strictly adhered to. He pointed out that the percentage of women in professional categories had increased in recent years and that currently women occupied several posts of directors of departments and chiefs of divisions in the Secretariat.

7. In concluding his address, Prof. Obasi urged Governments and Directors of NMHSs to take action in order to promote the participation of women in meteorology and hydrology. He pledged his own support in ensuring that women continued to be increasingly involved in the activities and work of WMO.

ADDRESS BY Ms JOKE WALLER-HUNTER

8. Ms Joke Waller-Hunter, stated that as the Executive Secretary of the UNFCC, she was interested not only in aspects of the lives of participants at the Conference, but also in efforts aimed at ensuring greater involvement of women in meteorology and hydrology. She noted that women have fought hard battles over many years to be accepted, appreciated and accredited as full-fledged scientists and to be elevated onto the same level as their male counterparts. She proposed that women have been active scientists for as long as human beings have lived on this planet, and gave the example of En Hedu'Anna, Chief Priestess of the moon-god in Sumeria, whose astronomical and mathematical endeavours over 4000 years ago were gleaned from writing on stone tablets. She made the point that societies "re-realised" that scientific progress and advancement are not determined by, or linked to gender.

9. Ms Joke Waller-Hunter made reference to the current discussion on climate change and UNFCC objectives to stabilize greenhouse gas concentrations and allow ecosystems to adapt naturally to climate change, thereby ensuring food production and sustainable economic development. As climate change impacts on development and as solutions must be consistent with development objectives, it becomes imperative to link the physical sciences such as meteorology and hydrology with the social sciences. The research needed to guide and inform policy options requires an unprecedented effort of individual collaboration, well beyond the scope of individual groups, countries or regions. Ms Waller-Hunter noted proudly that women have been actively involved in the work of the IPCC that informs the negotiations of the UNFCC. She named a few of these outstanding women and noted with pleasure the election of the first woman to the chair of an IPCC subsidiary body, Daniela Stoycheva (Bulgaria).

10. Noting that the definition and purpose of science includes no separation in terms of gender, Ms Waller-Hunter identified the major concern of the Conference as "the nexus between the substance of our respective scientific fields and the methodology of getting more women involved in our fields". She concluded that dedication, persistence and passion are the trademarks of women in science and policy that will pave the way to the future.

KEYNOTE SPEECHES

11. **Dr Kema Chikwe**, Minister of Aviation of Nigeria, indicated that the Conference presented an excellent opportunity for delegates from the developing countries, especially Africa, to prepare strategies on the achievement of gender equality in the fields of Meteorology and Hydrology in the NMHSs of their respective countries and in WMO. She said that this was absolutely necessary in this first decade of the 21st century because in most cultures in Africa, it is wrongly perceived that the role of women is in the home only. She noted that the level of encouragement and empowerment received by women under the present Nigerian Government led by President Obasanjo is unprecedented in the history of the country. The government has put in place a National Policy on Women and reserves 30% of all political appointments for women.

12. This progressive trend has also been reflected in the Nigerian Meteorological Service which employed its first female meteorologist in 1975 and now has 40 trained female meteorologists and hydrologists. Up to 2000 there were no women at the directorate level but in 2003 there are 4 women in the 12-person management team in the Nigerian Meteorological Agency. Dr Chikwe stated that on a continental level, career prospects of women in the field of meteorology and hydrology have improved, noting that before the Bangkok Conference there was only one female Permanent Representative (PR) to WMO from Africa but in 2003 there were 4 female PRs. She called for professional women in

positions of authority in meteorology and hydrology to be role models to younger women and girls, to inspire and motivate them.

13. In wishing the Conference success, Dr Chikwe concluded her talk with a touching poem that she had written entitled, "Meteorology and Hydrology: Cry of the African Woman", in which she appealed for relief for the over-burdened African woman from the life of labour and drudgery, and deprivation of food and water. However, the well-received poem ends with hope, "I am the new direction, the challenge, the wife, the mother".

14. **Prof. Lydia Makhubu**, President of the Third World Organization of Women in Science, (TWOWS) noted that while scientific development of the Third World depends crucially on the full utilization of the intellectual capacity of both men and women, the number of women in science and technology, as students and staff in institutions and in scientific leadership, is very small compared to that of men. She mentioned that women have a unique approach to the application of science and technology to the development process. As a result, her organisation's fundamental objectives are to try to apply the unique skills and talents of women scientists to the solution of urgent problems in the Third World, and in so doing position its membership alongside other scientists in the global scientific community. TWOWS's activities include the provision of research and travel grants to members and the publication of a newsletter. Also, it operates a scholarship programme to provide post-graduate fellowships to women to pursue studies to the PhD level; TWOWS has already awarded 155 fellowships.

15. Professor Makhubu enumerated the historical and traditional prejudices against women entering scientific fields and deemed them unfortunate, since science and technology have been termed engines for social and economic change and it is essential that women be well grounded in these areas as mothers, social educators and transmitters of ideas from generation to generation. Women can be wives, mothers and scientists at the same time, making the transition from traditional leadership to leadership in science, and transforming the natural inclination for life sciences into a strength to enable them to contribute to the use of science for the benefit of the Third World.

16. Professor Makhubu called for a shift in the paradigm governing the practice of science in order to promote greater involvement of women in science and technology, with men and women working together as advocates for women's development. Other proposals include tackling gender stereotyping in education as a means of changing negative attitudes towards education of girls in the sciences, building confidence in young girls to pursue scientific careers, promoting post-graduate training for women, strengthening women's capacity for research and promoting public understanding of science.

ORGANIZATIONAL ARRANGEMENTS

17. The Conference agreed to its working hours (0900-1200 and 1400-1700) and the arrangements for the conduct of the discussion groups. The Conference unanimously elected Mary Glackin (USA), Nancy Cutler (Canada), Magali Stoll (France), Shyamala Balasubramanian (India) and Marina Petrova (Russian Federation) as Session Chairs, and adopted the agenda as shown in *Appendix II*. The Session Chairs unanimously elected Ms Nancy Cutler as the Conference Chair.

EXPERIENCE IN OTHER INTERNATIONAL ORGANIZATIONS

18. Within the private sector and government, people have come to the realization that taking gender into account makes good business sense. Companies realize that to better serve their clients and to make best use of their employees, they must take into account the differences in what men and women want what they can bring to their organizations.

19. At an international level, activities over the last two decades have led to a clear recognition that progress on the environment, human rights, population, social and economic development all depend on the advancement of women. The UN Conference on Environment and Development held in Rio de Janeiro in 1992 affirmed women's vital role in achieving sustainable development and environmental protection. The increased recognition of the importance of the role of women led to the landmark Fourth World Conference on Women held in Beijing in 1995. From this Conference arose a Platform of Action which, amongst many other recommendations to governments around the world, admonished UN agencies to develop gender-sensitive policies and programmes. As a result, the concept of gender mainstreaming (see paragraph 23 below) was introduced into the planning process and programme implementation of many UN agencies.

20. **Ms Patricia Faccin**, Secretary of the Working Group on Gender Issues (GGI), at the International telecommunication Union (ITU) made a presentation on the experience of ITU from a gender perspective and shared some statistics on the percentages of women in the professional and support categories among the ITU staff. In 2002 these percentages stood at 71.5% professional males and 28.5% females compared to 27.7% males and 72.3% females in the general service category. There are 2 groups at ITU whose objectives are primarily to promote and ensure gender equality, the Internal Group on Gender Issues (GGI) and the Development Sector Working Group on Gender Issues (WGGI).

21. The GGI focuses on gender-awareness training workshops, participation in UN Agency activities, International Women's Day activities and harassment policy, among other things, and it has adopted gender mainstreaming as its primary goal in order to attain and maintain gender equality at ITU. The WGGI aims to increase awareness of developmental impact of telecommunication on women and promote mainstreaming of gender issues in telecommunication policy and programmes. Also, it wants to ensure that the benefits of telecommunication are equally available to women and men. It has pursued its goal with WGGI publications and promotional materials, a gender questionnaire survey, a gender website, expert presentations and workshops. The March 2002 World Telecommunication Development Conference at Istanbul reinforced gender mainstreaming at ITU and gender perspective is now integrated into all action, strategic, operational and budgetary plans of ITU.

22. **Mr Patrice Robineau** from the UN Economic Commission for Europe (ECE) made a presentation on the experience at the UNECE and on gender mainstreaming. He noted that women are under-represented at the decision-making level especially in technical organizations, and proposed that cultural and social barriers are slowing the process of inclusion of women in all spheres of political and economic life. Inequalities exist in employment and recruitment opportunities, in training, and in representation in the upper hierarchy of organizations. He indicated that gender mainstreaming is a required tool to promote gender equality since it operates to ensure justice, equity and the empowerment of women. In order to achieve a balanced society, Mr Robineau said there had to be changes in behaviours at social and political levels, and a step-by-step introduction of gender perspectives in all aspects of all operation and planning activity in organizations.

GENDER MAINSTREAMING

23. Gender mainstreaming is defined by the United Nations as "the process of assessing the implications for women and men of any planned action, including legislation, policies and programmes, in any area and all levels. It is a strategy for making women's as well as men's concerns and experiences an integral dimension in the design, implementation, monitoring and evaluation of policies and programmes, in all political, economic and societal spheres so that women and men benefit equally, and inequality is not perpetuated. The ultimate goal is

to achieve gender equality" (ref: Economic and Social Council, substantive session of July 1997).

24. A first step in mainstreaming gender is to do a gender analysis. Although WMO has not yet undertaken any formal gender analysis, some members of our community have recognized the gender dimensions of their activities. For instance, the Drought Monitoring Centre in Nairobi is working with a team of experts to investigate the role of women in the application of climate information in the Greater Horn of Africa region (see further discussions below by M. Onyango). The case is made that timely access and application of weather and climate information by rural women is crucial to poverty reduction, environmental management, disaster management and sustainable development. Members of the hydrological community report on the progress being made through the application of a gender mainstreaming in the water sector (see paragraph 28 below). In all cases equitable gender application throughout a project cycle is essential to its success.

25. **Ms Betty Soto Terrazas**, a public health specialist from Bolivia made a presentation entitled "Safe Water and Sanitation at the Local Level in Bolivia." She talked about the hard life of rural women who are loaded with responsibilities from an early age. Illiteracy is high among them and sanitation is poor, and the situation becomes tremendously worse during, and in the aftermath of natural disasters such as droughts and floods, when needed Government support is unavailable. Women are excluded from high level decision-making and only slow progress is being made with the introduction of a gender and culture perspective at that level.

26. She urged the Government of Bolivia to take appropriate measures to alleviate the situation of women by including them in all aspects of decision-making at the local level so that they can be aware and trained to handle themselves and take action to secure the safety and well-being of their families, as well as communities, when disasters strike. An effective way to achieve this goal to increase the involvement of women is to focus on the politics and institutions at the local level.

27. **Dr Maria Onyango** from the Maseno University in Kenya spoke on the role of women in the application of Climate Information in the Greater Horn of Africa. She showed that extreme climate events impacted more on African women who make up the bulk of the rural population but are unskilled to handle floods and droughts that are responsible for 70% of the regions natural disasters. Women lack technology and know-how to conserve water and they tend to degrade the forests when they forage for food and wood-fuel. Therefore, even though women are key actors in environment management activities they are inadvertently contributing to climate change.

28. Dr Onyango proposed that increasing the education and awareness of women in the region would empower them to be more proactive and responsible in handling climate impacts. In addition to community mobilisation, research on how to handle challenges in the context of specific traditional and cultural groups will be required to alleviate the plight of the African rural woman. Among actions she recommended to achieve solutions were appropriate pilot projects, training workshops scaled down to country level and gender mainstreaming for conservation of water and forest management strategies.

29. **Dr Emma Archer** from the University of Cape Town in South Africa stated that in spite of the fact that climate forecasting is becoming more accurate it has been found that, with respect to the agricultural sector, the Climate Information from the South African Weather Service can be limited in its reach. Information primarily needs to benefit the end-users. Studies show that subgroups such as women, lower-caste families, herders living on the outskirts and the elderly may be excluded from the benefits of climate information. Women's role in rural food security in South Africa is critical yet they can be effectively

excluded from climate information benefits. A study found that gender is a highly significant factor in the application and utility of climate information. The time of onset of a climate event was the most frequently requested forecast type and most forecasts were required for the period August to October. As head of households, men preferred the radio as their information source but women would prefer the information from extension officers.

30. Dr Archer noted that since women comprise a key climate information user-group but can be excluded from the climate information system, methods have to be found to spread the benefit to them. She proposed that the way forward is to focus on who needs the climate information, what specific information is required and how to communicate this information effectively to all users. Among factors to consider are the environment of the user, the local institutional capacity and who are the key intermediaries in the information dissemination.

BREAKING THROUGH THE GLASS CEILING

31. **Ms Linda Wirth**, of the Bureau for Gender Equality of International Labour Organization (ILO) delivered a presentation on Breaking through the Glass Ceiling. She defined the glass ceiling as the invisible, artificial barriers that block women from senior executive jobs, keeping them at the bottom of the economic pyramid. The ceiling exists in the way work is organised, in job segregation, gender pay gap, gender division of time spent at work and family and women's lack of management experience, among other things. She used December 2000 statistics to show the existence of the glass ceiling among women professionals in the UN system: women comprised half of all professionals at the United Nations Population Fund (UNFPA), but only 33.3% at ILO, 21.7% at WMO and 17.3% at the International Atomic Energy Agency (IAEA).

32. Ms Wirth stated that the glass ceiling must be dismantled because women's qualifications and skills are improving, more women are starting businesses, they are a key resource in new-product creation, and "it's good for business". There are several ways to dismantle the glass ceiling including diversification of occupations for men and women, sharing family responsibilities, elimination of gender biases in recruitment, promotion, training and increased gender sensitivities in human resource policies. At ILO, a set of gender audit recommendations have been made and include: clear targets to improve staff balance at all levels, promotion of female leadership in the office with active targeting of women for senior levels, creation of a working environment for a more balanced private and professional life and non-tolerance of sexual and other forms of harassment and all forms of sexist behaviour.

TAKING STOCK: SURVEY RESULTS AND WMO EXPERIENCE

33. **Ms Haleh Kootval**, Chief of the Public Weather Services Division at the WMO Secretariat and one of the focal points on women's issues in WMO, gave an overview of the results of a global survey carried out in 2001 to gather statistics on the level and nature of the participation of women and men in the activities of the WMO compared to the base line survey conducted in 1997. The key conclusion of the survey was that, although there had been some small, incremental increases in the percentage of women participating in some of WMO activities since 1997, there had been little significant change in the overall participation. Women remained drastically under-represented in WMO activities. Participation in technical commissions, regional associations and the Executive Council as well as employment in NMHSs and the WMO Secretariat alike continued to be mainly male-dominated.

34. Some specific survey results are shown below:

- Women comprise 6.4% of principal delegates to Congress, compared to 3.1% in the 1997 survey;
- Men are about 8 times more likely than women to serve as members of delegations to Congress, compared to 10 times in the 1997 survey;
- Men are 5 times more likely than women to serve as delegates to WMO Executive Council meetings, compared to nearly 7 times in the 1997 survey;
- Women comprise 11% of the membership of WMO technical commissions, the same as in the 1997 survey;
- Whereas data from a few large countries in RA II and RA VI show high rates of NMHS employment of women, globally over 90% of Members have low rates of employment of women in the workforce; and
- Even though women may comprise a reasonable fraction of the overall NMHS workforce, they constitute only around 10-15% of the participants in most WMO activities.

35. With respect to the numbers of employees in the WMO Secretariat, although the actual number of women staff suggests gender equity, in 1999 women comprised 18.9% of the professional staff and 78.6 % of the general services staff. However by end of 2002 there had been a small but significant increase in the percentage of professional women to 23.7%. In 2003, women fill in the positions of directors of three departments and chiefs of a number of divisions within the Secretariat.

TAKING STOCK: NMHSs EXPERIENCES

36. The Conference continued its work on this item in eleven discussion groups. The groups discussed items such as national policies that had impacts on gender issues as well as obstacles and challenges encountered when trying to respond to opportunities in developing a career in meteorology and hydrology. The participants also exchanged their personal experiences regarding their work place and identified common issues and problems confronted by most women working in NMHSs, most of which had already been discussed and addressed during the Bangkok Conference (1997). The results of the discussions were summarized and presented by the Chair of the session to the plenary. In theory and practice, social and institutional barriers to female participation still exist in many countries and pose constraints to improvements in women's work status. It is a challenge to get young girls to take up science subjects and to create empowering work environments for women in all aspects of meteorology and hydrology. This could be achieved through changing attitudes in the workplace, at home, and in national policies. (See Annex).

REVIEWING AND BUILDING ON BANGKOK RECOMMENDATIONS

37. **Ms Nancy Cutler** (Canada) made a presentation on the recommendations of the Bangkok meeting. The Conference reviewed those recommendations. It recalled that this meeting had adopted a set of recommendations to women professionals, NMHSs and the WMO Secretariat in five broad areas as follows:

- a) Education and training;
- b) Career and promotion opportunities;
- c) Work environment policies and practices;
- d) Participation in the work of WMO;
- e) Representation of women in the WMO Secretariat.

38. Ms Cutler noted that since that time some recommendations had been approved by the WMO Congress in 1999 and that resolutions had been adopted on the involvement of women at Technical Commission and Regional Association meetings. She informed the participants that the WMO website on women's issues had been established and that quite a few articles featuring women had been published in the WMO Bulletin. The upcoming edition of the Bulletin would feature women's roles in meteorology and hydrology. She further noted that most of the recommendations put forward by the Bangkok meeting were still viable and suggested that this conference discuss the programme of action or strategies for their early implementation which would ensure the improvement of women's participation in meteorology and hydrology. She further suggested that vital networking efforts be actively pursued by the participants at the Conference. The Conference took this advice into consideration when formulating new recommendations (see paragraphs 50-54 below).

MEETING CHALLENGES

39. **Mr Kaliba Konare**, Director of Education and Training Department at the WMO Secretariat gave an overview of training through WMO programmes. He emphasized that the education and training programme was one of the eight WMO major programmes and that the WMO Convention mentioned that one of the purposes of the WMO was to encourage training in meteorology. Mr Konare introduced the new WMO classification of personnel in meteorology and hydrology and stressed the importance of continuing training and further education for meteorologists/hydrologists and meteorological/hydrological technicians.

40. Mr Konare presented results of the 2002 WMO survey on Members' training requirements from an international perspective, and the establishment of world-wide priorities. He noted that the ratios of women to men in most Members' Services, except those in transition, were still quite low. With regard to WMO fellowships, he noted that the number of WMO female fellows had increased from 37 to 99 during the 1998 - 2002 period. He stressed that the award of WMO fellowships was based on the requirements and nominations from governments and that it was important to encourage governments and NMHSs to nominate and support qualified female staff.

41. **Ms Marina Petrova** (Specialized Centre for Meteorological Statistics, Russian Federation) outlined her own career to demonstrate that women could achieve successful careers, and gave participants advice based on her personal experiences. She pointed out that women must formulate personal goals, be self-confident, understand themselves and be prepared to make sacrifices. She mentioned a wide range of activities taking place at the Centre, which she heads. Looking back at her own experience, she stressed that she had been ambitious in her youth and was always trying to move ahead. She acknowledged the contribution of her colleagues and family in her success.

42. **Ms Dong Chaohua** (National Satellite Meteorological Centre, NSMC, China) made a presentation on women's contribution in developing Chinese satellite meteorological services. She presented a number of statistics on female staff members. She noted that a number of female staff members published papers, books and attended conferences/seminars and received awards. She showed a number of important technical products relevant to meteorological satellites which were made by women.

43. Ms Dong concluded that working in a meteorological service, especially in a satellite meteorological service, was an ideal profession for women, noting that opportunities and challenges co-existed. Responding to a question, she mentioned that the Director of the Board of the NMSC, under the China Meteorological Administration, had developed special progressive policies, including that of equal opportunities for men and women.

44. **Ms Vickie Nadolski** (NOAA/NWS, USA) made a presentation on increasing participants' understanding of the importance of mentoring. She explained that mentoring was linking an experienced person with a less experienced person to help the latter's personal and professional growth. She pointed out the importance of mentoring in recruitment and employee/leadership development and outlined essential characteristics of a mentoring relationship such as trust, confidentiality and partnership-building. She also enumerated the many benefits to "mentorees" as well as mentors themselves.

45. Ms Nadolski also introduced the concept of networking which is the exchange of information or services among individuals, groups, or institutions and provided many tips for efficient networking. She pointed out that networking was important for both men and women.

46. **Ms Maria Pirone** (AER, USA) introduced the use of new technologies which could allow for improved and more efficient working conditions. She noted that one of the numerous difficulties women encountered in their work included excessive travel which adversely impacted family life. She pointed out that strategies and methods could be devised in organizations to diminish such difficulties. She stressed that the evolution of telecommuting or teleworking technology allowed more work flexibility and held great promise for the future.

THE WAY FORWARD

47. Following all presentations and discussions under the previous agenda items, the Conference spent considerable time on deliberating future means to increase the participation of women in WMO and NMHSs' activities. The session was conducted in discussion groups which were charged to review the Bangkok recommendations, to compile lessons learned since the Bangkok meeting and to identify actions to be taken as outcomes of this Conference.

48. Ms Nancy Cutler reviewed the reports from the discussion groups and presented a summary to plenary. The Conference agreed that although bold steps were necessary to accomplish its goals, any action plan must take into consideration budgetary and programmatic constraints. This point was taken into account in particular during discussions of establishing a possible WMO Commission on Gender or Diversity. The latter was deemed by some participants to be a legitimate or even essential objective, but that the time was not right to make such a recommendation. Hence, the Conference suggested the establishment of other mechanisms such as an EC Advisory Group on Gender and felt that the establishment of a new WMO commission might be considered at a later stage.

49. The Conference agreed that the essence of the Bangkok recommendations were still valid. It noted that there had been some improvement in women's participation in meteorology and hydrology. For example women had greater access to fellowships and had reached some higher decision-making levels in NMHSs and WMO Secretariat. However, in general, progress had been slower than desired. The Conference therefore took time to analyze why there was this lack of progress and made note of the following lessons learned since the Bangkok meeting in formulating its recommendations. While it was clear from the discussion groups that experiences varied greatly from region to region and even within regions, the following points were deemed generally applicable:

- Follow-up in terms of monitoring, reporting, and dissemination of information had been insufficient.
- In general, there was no accountability for implementing recommendations.

- Many countries had not identified focal points and for those that had, their roles were minimal or undefined.
- Clear terms of reference for the focal points were needed.
- A resource book of meteorological, hydrological, and other related specialists with gender identification and subject-matter expertise would be useful.
- There should be more continuity from one conference on women in meteorology/hydrology to the next.
- Participants did not generally publicize the outcome of the conference in their home institutions.

50. Based on these lessons and noting the overall direction of UN agencies to improve gender balance, the Conference agreed to a set of action items. The Conference recognised that the actions should be addressed to women professionals, NMHSs, and the WMO Secretariat.

51. The Conference agreed that the following actions should be taken by women professionals, and in particular, participants to the Conference:

- Women professionals to promote and participate in the process of career development through formal and informal mentoring, guiding and counselling activities (also WMO Secretariat and NMHSs).
- Participants to brief the Permanent Representatives of their countries prior to Congress on outcomes of conference.
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52. The Conference urged NMHSs, Technical Commission and Regional Associations and the Permanent Representatives to take the following actions:

- NMHSs to appoint and support gender focal points in each country (hydrology and meteorology).
- Regional Associations and Technical Commissions to appoint and support gender focal points from among women with appropriate expertise.
- Regional Associations and Technical Commissions to report regularly on progress on gender issues to Congress/EC as appropriate.
- Permanent Representatives to make regular reports on gender issues at Regional Association meetings.
- Permanent Representatives to ensure that information related to career opportunities and development is made available to all staff members, in particular to women.
- NMHSs should take special actions to retain young female professionals, for example, by offering exchanges, secondment, and special assignments.

- NMHSs to consider establishing national associations of women in meteorology and hydrology with a view towards the eventual formation of an International Association of Women in Meteorology and Hydrology.

53. To facilitate and initiate the actions necessary, the Conference recommends that the WMO secretariat take the lead on the following actions:

- Establish a WMO gender expert position to monitor progress, analyze gender issues within WMO and assist in the implementation of actions recommended by this conference. The gender expert should be charged, among other things, with developing gender sensitivity training modules for use at the WMO Secretariat and in NMHSs.
- Establish an advisory panel to the Executive Council on gender issues, which should be composed of the WMO gender expert and gender focal points from Regional Associations and Technical Commissions. The panel would, in addition, consider what mechanisms might be needed in the future to advance gender equality.
- Include gender issues as an item to the agenda of Congress.
- Collect gender-disaggregated statistics on a regular basis from its members and compile reports on what Members have done to advance the recommendations of this conference and to identify any barriers to progress and report as appropriate.
- Develop terms of reference of national gender focal points.
- Encourage PRs to include women as members of delegations to WMO meetings, conferences, training programs, etc., by adding explicit language to that effect on nomination forms.
- Continue to promote, develop, and make available distance learning (awareness and training) modules, including those leading to degree programmes offered through accredited universities.
- Make the material from the Geneva Conference available on the WMO website on women in meteorology and hydrology.
- Make funds available to enable the actions recommended by this Conference to be implemented.

54. The Conference strongly recommended that another conference be organized in the future to follow-up the outcomes of the Geneva Conference. Scheduling should be such that there was sufficient time to prepare recommendations for the session of Congress following that conference.

55. The Conference was reminded that the detailed budget plan for the next financial period had already been submitted for the consideration of Congress. In the face of the budgetary constraints, it was stressed that the participants had an important role in conveying the above recommendations to their respective permanent representatives and in convincing them to lend their support for their acceptance by Congress.

NEXT STEPS

56. A panel comprising representatives from Australia, Barbados, France, India, Nigeria and the United States of America shared their own experiences of how progress was occurring in their services, but also how they had each worked hard to overcome obstacles

in their careers. They all shared the view that the Conference had been a great success and that much energy and determination had been generated. The challenge now was to keep the momentum going. Successful implementation of the recommendations would depend on how the participants, as ambassadors, publicised and promoted the work of the Conference. The Chair of the session, Ms Marina Petrova (Russian Federation), closed the panel discussion with an emotional appeal to the participants. She likened the outcomes to the birth of a child which must be nurtured to enable it to grow to desired expectations and urged that all the participants work hard to ensure that the expectations of the Conference would be met.

57. The Conference adopted its report and agreed that the report including the recommendations and action plan should be presented to Congress-XIV.

CLOSURE

58. Prior to the closure of the Conference, the participants expressed their appreciation to the Secretary-General of WMO for hosting the event, and to the chairs, the organizing committee, and staff of the Secretariat who had through their hard work ensured the success of the Conference. Mary Glackin (USA), chair of the session, asked each participant to commit to work with the youth to encourage them to choose careers in meteorology and hydrology and to encourage them to be gender sensitive. She asked that each person in the audience also commit to mentor and provide opportunities for their female colleagues, to work with management to remove barriers and to work with governments to develop national policies which would help us reach our goal of gender equality. The Deputy Secretary General, Mr M. Jarraud, thanked all the participants for their attendance, their Permanent Representatives for nominating them, and the many sponsors of the Conference for their generous support. The Conference closed at 1700 on Thursday, 27 March 2003.

COMMON ISSUES AND PROBLEMS IDENTIFIED

The eleven discussion groups identified the following common issues:

BARRIERS:

Social and institutional barriers to female participation still exist in many countries and pose constraints to improvements in women's work status. These include:

- Some women are largely excluded from the paid labour force.
- Social structure, socio-economic conditions, cultural and religious traditions in some countries encourage investment in male over female children, and few females are educated and acquire skills for work.
- There can be occupational gender segregation between women and men due to differences in educational attainment.
- There can be gender differences in work experience.
- There is sometimes a cultural discrimination against women.
- Because of child-bearing, child-rearing and housekeeping responsibilities, women sometimes deliberately choose to work in jobs that are not too demanding of their time.
- Attitude and mindset of women themselves sometimes is a barrier.
- Women can be less geographically mobile than men and therefore are less able to accept promotional transfers.
- Lack of awareness about the fields of meteorology and hydrology results in fewer girls being attracted to the profession.
- Information about WMO activities and training opportunities often does not reach women in NMHSs or if it does, not in a timely manner.
- Interruptions in career progress associated with raising families may delay the age at which women might be interested in training opportunities, and in some cases, they face age discrimination.
- Administrative and managerial positions are mostly held by men who are not always receptive to recruiting and promoting women.
- It is recognized that there is a "Glass Ceiling" – Invisible artificial barriers that block women from senior executive jobs.

EXPERIENCES:

Conference participants reported the following experiences:

- In some countries, the male and other family members need to have a better understanding, that for most women the opportunity to earn income provides financial independence, self confidence and some control over their lives and that her earnings can make a significant contribution to the improvement of their families welfare.
- In some countries such as those of the former USSR, female participation has increased dramatically largely due to the increased participation of married women and improvements in female participation in higher education.

- Although some countries have developed a national policy for the education of girls, a large proportion of young girls still prefer not to study mathematics and science subjects.
- Women in some countries were able to participate better if their family and household responsibilities are reduced through smaller families and sharing of parental responsibilities by both parents and the availability of private and public child care.
- Differences in hours worked and work experience may be important factors in explaining gender differences in earnings.
- Women are often constrained to work in low-paying levels within the NMHSs.
- Gender differentials in earnings sometimes exists. For example, women are constrained to earn less, even with equivalent qualifications or at every level of educational attainment.
- Some countries do have national economic policies to create more employment opportunities for women in the NMHSs and to improve the status and welfare of women.
- Socio-economic development has played a critical role in increasing women's opportunities in the NMHSs in many countries.
- While opportunities for female participation may increase as expected with the level of development, region-specific cultural and institutional factors persist to have some effect on the kinds of jobs in the weather service which are available to women.
- While in some countries women and men enjoy equal educational opportunities, there are still a significant number of countries where women still need access to formal education and training in the fields of meteorology and hydrology if they are to play a greater role in the future.
- In some cases, employment opportunities for women have not kept pace with the rise in women's educational levels and aspirations.
- Social barriers to female participation in the work force are sometimes being eroded by social and economic development.

CHALLENGES:

To make progress, the NMHSs, the WMO and meteorologists and hydrologists are challenged to:

- Promote development policies emphasizing universal education.
- Improve female education to reduce the gender gap in earnings.
- Change social attitudes about women within the family, society and, in particular, within the work environment.
- Create an empowering environment for women in the workplace/NMHSs.
- Work to change national policies where applicable to improve the status of women.
- Serve the unique needs of women as end-users of our products.
- Provide incentives to keep young women in the NMHSs.

- Encourage young girls to take up science subjects (e.g. math, physics) so they are qualified to pursue a career in meteorology or hydrology.
- Change the traditional concept of power/management which has been developed by men for men.

OPPORTUNITIES:

Opportunities to move ahead include:

- Scope for regional cooperation and assistance in specific areas of female education, skills training and employment creation.
- Foreign investment and foreign aid to contribute to the improvement of women's status especially in low-income countries.
- Training programs to be directed specifically for women especially those in countries where women have less access to employment in the NMHSs.

SECOND WMO CONFERENCE ON WOMEN IN METEOROLOGY AND HYDROLOGY

Geneva, Switzerland, 24 to 27 March 2003

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**SECOND WMO CONFERENCE ON
WOMEN IN METEOROLOGY AND HYDROLOGY**

Geneva, 24-27 March 2003

AGENDA

- I. OPENING OF THE CONFERENCE
- II. KEYNOTE SPEECHES: "The Contribution of Women to Science and Technology"
- III. ORGANIZATIONAL ARRANGEMENTS
- IV. EXPERIENCE IN OTHER INTERNATIONAL ORGANIZATIONS
- V. GENDER MAINSTREAMING IN METEOROLOGY AND HYDROLOGY
- VI. BREAKING THROUGH THE GLASS CEILING
- VII. TAKING STOCK: REPORT ON WMO SURVEY RESULTS
- VIII. TAKING STOCK: NMHSs EXPERIENCES
Opportunities and challenges, national policies and experiences
- IX. REVIEWING AND BUILDING ON BANGKOK RECOMMENDATIONS
- X. MEETING CHALLENGES
 - a) Introduction
 - b) Training through WMO programmes
 - c) Career development
 - d) Networking and Mentoring
 - e) Using new technologies including telecommuting
- XI. THE WAY FORWARD
 - a) Increasing participation of women in WMO activities
 - b) Maintaining momentum
 - c) Methods to report/monitor progress
 - d) Role of focal points/rapporteurs
- XII. NEXT STEPS - REPORT TO CONGRESS
- XIII. ADOPTION OF THE CONFERENCE REPORT
- XIV. CLOSURE