Consultative Group on International Agricultural Research (CGIAR)

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STAKEHOLDER MEETING

The Global Mountain Program

Agenda Item: **18 – The Global Mountain Program**

This item is for: Information [X] Discussion [ ] Decision [ ]

Proposed Action: None

Background: The attached document is a concept note on a proposed theme for a CGIAR challenge program.

Comments:

The Global Mountain Program:
A Proposed CGIAR Challenge Program

This note describes the need to re-engineer and strengthen the CGIAR Global Mountain Program (GMP) and proposes it as a candidate for the Global Challenge Program (GCP). It describes the importance of mountain areas for biodiversity conservation, food and water supply, and environmental sustainability, as well as related crosscutting regional development themes, and highlights the potential to share and replicate mountain development research worldwide. It also explains how the Global Challenge Program on Sustainable Mountain Development would meet the GCP criteria formulated by the CGIAR Task Force.

The proposed participation of key GMP partners such as CIAT (International Center for Tropical Agriculture), ICRAF (International Centre for Research in Agroforestry), ILRI (International Livestock Research Institute), and national research partners has been discussed and reaffirmed with other CGIAR Centers, including ICARDA (International Center for Agricultural Research in the Dry Areas), IWMI (International Water Management Institute), IFPRI (International Food Policy Research Institute) and IPGRI (International Plant Genetics Institute).

I. GENERAL OBJECTIVE

To strengthen the GMP's role, re-evaluate its focus, and foster stronger inter-Center and R&D institution commitments to achieve poverty reduction and sustainable mountain area development in the Andes, East African Highlands, Highlands of Central and West Asia and North Africa (CWANA), and other Asian mountain regions, and exchange research output across different mountain regions.

II. SPECIFIC OBJECTIVES

1. Evaluate new, sustainable opportunities to increase mountain inhabitants' standard of living;
2. Assess and communicate the impact of research findings from the GMP, its regional implementers, and other natural resource management initiatives conducted in highland and mountain areas by other CGIAR Centers and their partners;
3. Strengthen leadership and build a sense of ownership and commitment among participating institutions and donors;
4. Support research in key thematic areas related to mountain regions worldwide (e.g. biodiversity maintenance, watershed management, tradeoffs between productivity and environmental sustainability, development of sustainable production systems and impact and mitigation of climate change);
5. Raise public awareness of the importance of mountain areas, taking advantage of the exposure provided by the activities of the International Year of the Mountain (IYM) and the Rio+10 Conference in 2002; and,
6. Develop a professional electronic communications platform for the GMP to facilitate regular information exchange, and other related e-communications instruments at regional and global levels (i.e. e-workshops, e-conferences, on-line database, etc.) between GMP implementers, partners and other interested parties.

III. BACKGROUND AND JUSTIFICATION

For millennia, mountain areas have been important in terms of biodiversity, forest products, and crop and livestock production. About 80% of the planet’s fresh water originates in mountain

areas. Many of the world's most important food crops evolved in the unique micro-ecologies found in mountain valleys, providing a direct life-support base for about one-tenth of humankind.

Despite the environmental, economic, and agricultural importance of mountain areas, decision-makers in the lowlands frequently ignore the needs of highland areas, often regarded as backward and unimportant. This contributes to marginalization and inequity, which added to increased population pressure and lack of infrastructure, lead to the overuse and degradation of natural resources, political violence, decreased market access, and poverty. It is estimated that 22 of the 34 major armed conflicts that occurred, since 1997, involved inhabitants of mountain areas; thus development of the highlands is also important in terms of world peace and stability.

Degradation of natural resources in mountain areas is felt by those living downstream on irrigated lowland farms and in overcrowded cities as well as by local inhabitants. These conditions pose a serious threat to world water resources as well as to biodiversity, cultural diversity, and food security. Mountain development is crucial for breaking this negative cycle and incorporating mountain regions and their inhabitants into the mainstream of national and regional development.

The global importance of mountains and the possibility of sharing and applying research findings worldwide, combined with the inherent risks of complacency toward development of these critical areas, provide a strong impetus for addressing mountain development under the scope of a GCP.

IV. THE GMP: A RESPONSE TO THE UNCED AGENDA

In 1992, more than 100 heads of state met in Rio de Janeiro, Brazil, for the first international Earth Summit (United Nations Conference on Environment and Development - UNCED). The Summit elicited global consensus and political commitment at the highest level for cooperation on urgent matters of development and the environment. Chapter 13 (*Managing Fragile Ecosystems: Sustainable Mountain Development*) of UNCED's Agenda 21 acknowledged the significance of mountain areas within this context.

In support of this agenda, the GMP was created in 1997 to provide a system-wide focal point for research on global mountain environments. The GMP built its action plan around the two main mountain ecosystem programs described in Chapter 13 of Agenda 21:

- generation and strengthening of knowledge about the ecology and sustainable development of mountain ecosystems; and
- promotion of integrated watershed development and alternative livelihood opportunities.

GMP's goals included contributing to the well-being of mountain people by alleviating poverty, improving natural resource management, and increasing agricultural productivity in mountain areas. The program draws on the collective capacity available within and outside the CGIAR to address these needs in a concerted fashion.

With the International Potato Center (CIP) as convener, the GMP selected three regions as benchmark areas and identified research programs for each one. The African Highland Initiative (AHI), convened by ICRAF, took the leadership role in the East African Highlands; the International Center for Integrated Mountain Development (ICIMOD) headed efforts in the Hindu-Kush Himalayas; and the Consortium for the Sustainable Development of the Andes (CONDESAN), convened by CIP, oversaw activities in the Andes. The program was expanded to include NGOs, universities, and national research institutions. CIP and its partners also worked together to form the Mountain Forum, a complementary effort promoting the exchange of

knowledge and information on mountain research and development among its 2500 individual and 150 institutional members from over a hundred countires.

By drawing different types of institutions into its program and participating in the Mountain Forum, the GMP supports cooperation and information-sharing among researchers and development practitioners around the world. Crosscutting research themes include natural resource management, biodiversity conservation, socioeconomic and policy issues, and agricultural production systems.

IV.i. INCREASING KNOWLEDGE ABOUT MOUNTAIN ECOSYSTEMS

Since its inception, the GMP has promoted sustainable development in mountain ecosystems by:
--*creating or improving strategic alliances in each GMP benchmark area to increase awareness of the vulnerability of mountain ecosystems, and to facilitate future research activities.* Eco-regional programs ICIMOD, CONDESAN, and AHI lead efforts in the Hindu Kush Himalayas, the Andes, and the African Highlands, respectively.
--*developing and/or adapting cost-effective tools and methods to generate information on ecology, natural resource management, and socio-economic activities at different spatial scales.* Emphasis is on the development and validation of geo-spatial tools to allow researchers to simulate expected impact of climate variability and potential coping strategies on agricultural production and natural resources in order to assess policy options at different scales (plot, farm, watershed, region, country) and to study the potential effects of tradeoffs in terms of production, human health, and the environment.
--*empowering mountain inhabitants by training local professionals in the use of new tools and methods.* In the Andes and the Himalayas, more than 200 people have received short-term training and more than 20 have earned or are pursuing MS or PhD degrees through the Global Mountain Fellowship Program.
--*systematizing indigenous knowledge to preserve it for future generations.* Researchers in the Andes have collected indigenous soil classification and climate forecast knowledge. Artificial intelligence is being used to preserve this knowledge, which is threatened by erosion.
--*actively participating in the Mountain Forum.* CONDESAN's information arm, InfoAndina, serves as the Latin American node for this network. More than 5000 people have participated in InfoAndina's electronic forums on mountain issues. ICRAF hosts the African node. Our key partner from the Hindu-Kush-Himalayan region, ICIMOD, hosts the Asian-Pacific Mountain Network, as well as the global Secretariat of the Mountain Forum.
--*linking research and development efforts.* Tools developed for ex–ante impact assessment have been used to design and monitor development projects in mountain regions; technology has been transferred and additional research priorities have been identified.

Since its inception, ICARDA's research has also been addressing the problems of agriculture in the highalndas of Atlas region of Magreb, Anatolian Plateau of Turkey and highlands of Iran, Afghanistan and Pakistan, within the framework of its "Highland Regional Program", established in 1980. Emphasis has been on participatory approaches involving local communities. ICARDA has trained, so far, more than 1000 researchers from the highland areas of CWANA. The MART/AZR project in Quetta, Balochistan, funded by the USAID, permitted institutional strengthening through development of research facilities and a cadre of highly trained scientists for highland research, through M.Sc. and Ph.D. programs. Researchers have collected and documented indigenous knowledge about water harvesting, communal grazing and management of livestock.

IV.ii. PROMOTING INTEGRATED WATERSHED DEVELOPMENT AND ECONOMIC OPPORTUNITIES FOR MOUNTAIN POPULATIONS

Soil erosion has a devastating impact on a vast number of rural people who depend on rain-fed agriculture in mountain and hillside areas, where poverty, unemployment, poor health, and bad sanitation are most prevalent. Ecological deterioration in these watershed areas also has a direct effect on most of the world's inhabitants. In the hillside areas of the Andean countries of South America, or the highlands of Yemen and Balochistan in the Near East, for example, a large portion of the farming population are faced with the rapid degradation of land. Similarly, in the mountain and upland areas of the Himalayas, Central and West Asia, South-East Asia, North Africa and East and Central Africa, which make vital contributions to agricultural production, the expanding population is driving farmers to cultivate marginal lands. In many areas, excessive livestock grazing has been blamed for deforestation and loss of biomass cover.

In response, GMP has initiated numerous efforts to promote integrated watershed development. Nine watersheds in the Himalayas and the Andes have been studied. Lessons learned have been systematized into interactive CD-ROMs that describe watershed, biophysical, socio-economic, and cultural conditions for each area, including soils, production systems, land- use systems, climate, water, and biodiversity. The CD-ROMs assess patterns of land, water, plant, and animal resource use in terms of vulnerability and present options and strategies for the development of each watershed area, as well as the actions required. Research results to date have proved encouraging, making a solid case for GMP's participatory, integrated approach.

Themes that require renewed attention in mountain areas

(a) Incidence of high rate of food insecurity and malnutrition in mountain areas and lack of concerted actions so far to address this serious problem in the implementation of Chapter 13;
(b) Implications of the management of mountain watersheds for water quantity and quality downstream, considering that over half of the global population depends on water from mountain areas;
(c) Mechanisms for equitable sharing of benefits of services from mountain areas between downstream beneficiaries and mountain people, and research to evaluate and develop such mechanisms;
(d) The need for more adequate levels of funding for scientific research in mountain areas and the need for more innovative approaches to research that involve local communities and knowledge to a much greater extent;
(e) Culture and traditional knowledge;
(f) Gender issues;and
(g) Conservation of biological diversity in mountain areas.

Source: Status of Preparations for the International Year of the Mountains, 2002, Report of the UN Secretary General, August 2000

V. THE OPPORTUNITY

The declaration of 2002 as the International Year of the Mountain offers an opportunity to review the progress achieved since the Rio Summit, as well as the possibility to highlight the CGIAR's contribution to Agenda 21. At the same time, the current reformulation of the CGIAR provides a potential spotlight to help highlight the importance of mountain areas, capture donors attention, and obtain political commitment, thus increasing the CGIAR's ability to contribute to major development topics. Water, as well as the conservation and use of biodiversity, will be the key

natural resource issues for this century. These issues are intrinsically linked to poverty eradication, one of the key challenges in high-mountain areas.

Key opportunity provided by IYM 2002

"The (UN) General Assembly has encouraged States, the United Nations system and all other actors to take advantage of the International Year of Mountains to ensure the well-being of mountain communities by promoting conservation and sustainable development in mountain areas; increase awareness of mountain ecosystems and their importance in providing crucial goods and services, such as water supply and food security; and promote and defend the cultural heritage of mountain communities (resolution 55/189 of 20 December 2000). The Assembly proclaimed the Year by resolution 53/24 of 10 November 1998. The lead agency for the Year is the Food and Agriculture Organization (FAO) of the United Nations." (United Nations Observances)

"The conservation and sustainable development of mountain areas requires political commitment at international and local levels.The International Year of Mountains will raise more awareness of the social and economic benefits of investing in mountain areas." (Tage Michaelsen, Chief of FAO's Forest Conservation, Research and Educational Service)

Thus far, IYM activities have reached a vast audience. Over 300 mountain experts from every part of the world working in the fields of science, development cooperation, and policy-making recently took part in the World Mountain Symposium 2001 in Interlaken, Switzerland, to inaugurate, at a global level, series of IYM related activities planned for 2002. Many mountain related events are already programmed for 2002 (See joint FAO-MF's Calendar of Events at www.mtnforum.org). Additional exposure is being provided through the thousands of members of the Mountain Forum and mountain initiatives.

VI. ELEMENTS OF THE STRATEGY

1. Strengthening the inter-institutional steering committee (and improving linkages) by incorporating CGIAR Centers and other key stakeholders;
2. Strengthening leadership: hiring a full-time coordinator;
3. Renewing stakeholder interest in mountain research and promoting their participation in GMP;
4. Reviewing and synthesizing lessons learned and documented impact of GMP, CONDESAN, African Highlands Initiative, ICIMOD, ICARDA's, ILRI's and CIAT's hillside programs, and promote their implementation in development institutions;
5. Developing and implementing a research agenda through the participation of program partners;
6. Strengthening of Information and Communication Technologies (ITC) in mountain regions to facilitate information sharing and exchange on conservation and sustainable development between mountain regions, as a device to empower mountain inhabitants;
7. Increasing public awareness and knowledge of mountain ecosystems, including their dynamics, functioning, and worldwide importance in terms of food production, water provision, biodiversity, and the environment;
8. Lobbying for supportive national and international policies and;
9. Participating in IYM and Rio+10 activities to increase public awareness of mountain areas and ensure adequate political, institutional, and financial commitment to GMP objectives.

VII. OUTPUTS

- Increased well-being and income of mountain inhabitants through better incomes, employment, nutrition and health;
- Formulation of a Joint Vision of Sustainable Mountain Development;
- Adaptation of germplasm to different ecosystems;
- Technologies and methodologies for more sustainable farming systems, priority setting, enterprise development and policies;
- Effective and fully developed electronic communication platform for GMP partners and other interested third parties;
- Trained GMP partners on e-communications tools;
- Supportive national and international policy alternatives;
- Tools and options to help decision-makers diminish poverty and natural resource deterioration and protect mountains and their adjacent areas;
- Protection of biodiversity by its conservation, and use in new markets;
- Series of multimedia CD-ROMs to highlight problems, lessons learned, best practices, and success stories in mountain areas;
- Global Mountain Fellowship Program to develop mountain area human capital;
- Strategies for addressing the identified challenges, including the linkage of eco-tourism with agricultural development;
- Strong inter-institutional Global Mountain Program, including Future Harvest centers, national institutions, and advanced research and development organizations;
- Improved recognition of the role of mountain areas; and,
- Promotion of the Mountain Agenda to donors, other interested parties, and the public.

VIII. SUSTAINABLE MOUNTAIN DEVELOPMENT AS A GCP

GCP: Phase I Criteria

- Address an issue of overwhelming significance. Issues addressed can be global, regional, or sub-regional in importance;
- Fits within the CGIAR mission and goals; and
- Is likely to generate significant outputs and impact.

Mountain areas have an overwhelming and global significance, and their sustainable development has a great potential to generate significant outputs and impacts. As stated in UNCED Agenda 21, Chapter 13: "…as major ecosystems representing the complex and interrelated ecology of our planet, mountain environments are essential to the survival of the global ecosystem …. ."

GCP: Phase II Criteria

- Is time-bound and clearly defined in terms of research outputs as well as potential impacts on CGIAR clients;
- Has clearly defined mechanisms for delivery and dissemination of research outputs;
- Is based on science that is both excellent and relevant, often requiring logical integration of multiple disciplines to address issues of great complexity;
- Employs a mode of operation that enhances efficiency and effectiveness of the CGIAR System, with demonstrable contribution to CGIAR goals;
- Involves both CGIAR centers and their partners and is based on the core competence and comparative advantage of collaborating partners;
- Adds value to existing research and produces synergies between existing core competencies of the Centers and the program partners;
- Is cooperative/collaborative in nature, with no overwhelming dominance by one institution;

- Gives evidence of stakeholder involvement in problem identification and link to bottom-up priority-setting mechanisms;
- Requires significant levels of up-front funding to achieve its objectives;
- Has clear evidence that donors are willing to commit significant up-front funding; and
- Involves active participation of NARS from the South and contributes to capacity building of NARIs from the South.

The proposed Global Challenge Program for Sustainable Mountain Development:

1) Has mechanisms to deliver/disseminate research outputs. The [CONDESAN] InfoAndina network at a regional level, and the Mountain Forum at a global level, provide interactive information exchange, resulting in increased capacity among organizations and individuals working in and for mountain areas.
2) Will include bottom-up priority-setting, with participants from a variety of disciplines and venues, including mountain communities, CGIAR Centers, NGOs, scholars, researchers and research initiatives, groups and institutions specializing in mountain-related issues, private associations and organizations, intergovernmental and governmental bodies, and the public. Partnership with the broad Mountain Forum's stakeholder membership base will facilitate this process.
3) Will apply new and participatory approaches (e.g. evaluation of the linkage of mountain tourism) to channel the necessary investments in rural development and provide additional income and employment to mountain communities. By perceiving a benefit from protecting their cultural diversity and biodiversity, communities will become more involved in protecting their environment and developing agriculture.
4) Is time bound in its delivery of technologies, development of institutional capacity and identification of policies within a 8-10 year time frame.
5) According to the UN Status of preparations for the IYM (August 2002), a major challenge to the successful implementation of Chapter 13 of Agenda 21 is the mobilization of adequate funding. A much broader base of bilateral, multilateral and private-sector funding and financing than has so far existed is required in order to respond to the needs of mountain regions and their inhabitants. More concerted efforts at the national level could also provide additional resources. To date, a small number of donor organizations and countries have carried most of the financial burden of mountain development assistance. However, various donors, such as SDC, Ford, IDRC and others have expressed interest.

IX. KEY PARTICIPATING INSTITUTIONS

We expect the participation of ICARDA, ICRAF, ILRI, CIAT, IWMI, IFPRI, ICIMOD, CONDESAN, AHI, TMI, Mountain Forum, FAO and CIP. In addition, institutions now cooperating in CONDESAN and the AHI, as well as the sub-regional initiative for Central Asia and the Caucasus (CAC Forum) and West Asia and North Africa (AARINENA) will contribute.

X. DURATION OF GCP FOR SUSTAINABLE MOUNTAIN DEVELOPMENT

Eight (8) years

XI. BUDGET

GLOBAL MOUNTAIN PROGRAM
ANNUAL BUDGET (expressed in USD)

ITEM	CIP AND CG-CENTERS	DONORS	TOTAL
Coordination	100,000	100,000	200,000
Strategy development	50,000	50,000	100,000
Professional fees/consultants	60,000	15,000	75,000
Temporal services	7,500		7,500
Research projects	200,000	400,000	600,000
Regional activities		180,000	180,000
Training		60,000	60,000
Information		100,000	100,000
Travel	15,000	45,000	60,000
Telecommunications	7,500	5,000	12,500
Office supplies	7,500	10,000	17,500
TOTAL	447,500	965,000	1,412,500

APPENDIX

Proposed Activities

- To evaluate novel and sustainable opportunities to increase the standard of living of mountain inhabitants
  - Assess the impact of linking tourism with biodiversity, environmental conservation, and participatory community development; and
  - Assess marketing and transformation alternatives to add value to agricultural products.

- To evaluate and communicate the impacts of research findings from the GMP and its regional implementers, and from other natural resource initiatives in highlands and mountains lead by other CGIAR Centers
  - Conduct a comparative analysis among watersheds in mountain areas;
  - Design, develop, and distribute CD-ROMs highlighting the problems, lessons learned, and success stories in selected watersheds in the Andes, Central America, Asia, and Africa. Use CONDESAN's InfoAndina and the Mountain Forum as a way to disseminate results; and,
  - Conduct regional e-workshops and global e-conferences based on the research findings of the GMP.

- To strengthen leadership and increase a sense of ownership and commitment among participating institutions and donors
  - Formulate a Joint Vision of Sustainable Mountain Development;
  - Focus (during this new phase) on issues such as water, soil and nutrient erosion, tradeoffs in terms of production and environmental quality and the impact on human health and poverty reduction;
  - Establish and design a development plan, with strategies for addressing the challenges posed during this new phase, given the new focus of the GMP and the IYM;
  - Used established alliances with institutions working on mountain issues to promote the Mountain Agenda at the Rio+10 meeting;
  - Through e-communication tools establish a broad base of mountain stakeholders to share the advances of the GMP;
  - Invite stakeholders to participate in the steering committee to increase interest and sense of ownership; and
  - Develop a funding strategy that includes approaching donors linked to development projects dealing with natural resource management in highland and mountain areas (e.g. SDC, IDRC, IFAD, and GTZ).

- To support research in key thematic areas related to global mountain areas, such as the maintenance of biodiversity, watershed management, tradeoffs in terms of productivity and environmental objectives, development of sustainable production systems, and impact and variation of climate change
  - Research and training in key thematic areas related to global mountain areas; particular attention will be given to research findings that can be replicated across regions;
  - To establish a readily available on-line data base built on the basis of the GMP findings and contributions; and,

- To establish an e-communication platform for continuous information sharing and exchange between the GMP members and partner organizations
    - Through Mountain Forum, establish a specialized e-communication group comprising all GMP members and partners;
    - Conduct one annual e-workshop of each GMP region and an annual e-conference for all members and partners, on selected topics;
    - Establish an on-line data base on GMP's findings and contributions; and,
    - Train GMP partners in e-communication tools

- To raise public awareness of the importance of mountain areas and to take advantage of the exposure provided by the celebration of the 2002 IYM and the Rio+10 Conference
    - Identify spokespersons to represent the GMP in IYM activities;
    - Lobby for supportive national and international policies;
    - Present GMP research impacts and findings in different fora during IYM;
    - Develop public awareness materials to highlight different problems, opportunities and results obtained through the GMP and its partners; and
    - Disseminate electronically GMP contributions.