

IPGRI's new strategic directions



Diversity for Well-being

Making the most
of agricultural
biodiversity

FUTURE
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IPGRI is
a Future Harvest Centre
supported by the
Consultative Group on
International Agricultural
Research (CGIAR)



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Making the most
of agricultural
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Our vision

People today and in the future enjoy greater well-being through increased incomes, sustainably improved food security and nutrition, and greater environmental health, made possible by conservation and the deployment of agricultural biodiversity on farms and in forests.

Our mission

IPGRI undertakes, encourages and supports research and other activities on the use and conservation of agricultural biodiversity, especially genetic resources, to create more productive, resilient and sustainable harvests. Our aim is to promote the greater well-being of people, particularly poor people in developing countries, by helping them to achieve food security, to improve their health and nutrition, to boost their incomes, and to conserve the natural resources on which they depend. IPGRI works with a global range of partners to maximize impact, to develop capacity and to ensure that all stakeholders have an effective voice.

The purpose of IPGRI's work is to ensure that individuals and institutions are able to make optimal use of agricultural biodiversity to meet the current and future development needs of people and societies. To achieve this purpose, and in support of its mission, IPGRI will carry out a range of activities to meet six broad objectives.



Demonstrating the benefits: Demonstrating the social, economic and environmental benefits of agricultural biodiversity.



Biodiversity for income and food security: Ensuring that agricultural biodiversity is conserved, characterized and used to improve productivity.



Researching agricultural biodiversity: Generating knowledge about agricultural biodiversity through research and making such knowledge available.



Enabling and empowering: Developing human and institutional capacity to conserve and make effective and sustainable use of agricultural biodiversity.



Supportive policies: Analyzing policies and fostering an environment that supports the conservation and use of agricultural biodiversity.



Getting the word out: Raising awareness of the values of agricultural biodiversity and the importance of the conservation of genetic resources.



For more than 30 years our centre has been concerned with the use and conservation of crop diversity. That will not change. But the world within which and on behalf of which we operate has changed and continues to change. That makes it necessary to take a fresh look at what IPGRI does and how we go about doing it. Accordingly, IPGRI consulted widely with its stakeholders and conducted several internal workshops and meetings in order to develop a new strategy to guide our future activities. The new strategy includes novel elements and approaches, but it is not a radical reformulation. It represents, however, a bold change in emphasis and focus.

The starting point for this new strategy is that IPGRI is putting people, especially poor people in developing countries, at the centre of its agenda. Our success will therefore be assessed in part by the contribution we make to people's well-being: greater food security, better health and nutrition, higher incomes, all achieved while protecting the environment and natural resources. In the process we will also see improved conservation of agricultural biodiversity, greater empowerment of people, more supportive policies and other benefits. This document introduces the new strategy that IPGRI has adopted to achieve the impact it wants to have.

Building IPGRI's future

IPGRI is a member of the Future Harvest Alliance. This global grouping of research centres is dedicated to poverty alleviation and rural development through better agriculture, and is supported by the Consultative Group on International Agricultural Research (CGIAR). Like all the centres of the Future Harvest Alliance, IPGRI harnesses science and research, and reaffirms its commitment to produce global public goods of long-term benefit to society at large.

IPGRI's headquarters are in Rome, Italy, but it is a decentralized organization, with five major regional offices and more than 300 staff operating from almost 30 locations around the world. Our way of working is based firmly on collaborating with others, leveraging our resources and abilities so that we not only get results but also help to develop the capacity of those we work with and for. Understanding the needs of our partners is thus of crucial importance, and the new IPGRI strategy reflects this. We held structured conversations with more than 70 individuals, and 481 people responded effectively to a Web-based survey (the response rate among people asked to take part in the survey was a gratifying 55%). Internally, several workshops and task forces tapped IPGRI's collective experience to identify the most promising avenues for our activities.

All these interactions allowed people to express what they saw as the overwhelming challenges facing the world, and how they believed that agricultural biodiversity in general and IPGRI in particular could help to meet those challenges. IPGRI's new strategy reflects these concerns, and the organization is grateful to all who contributed.





Meeting needs through partnership

IPGRI values partnership, in which each actor's strengths are complementary and synergistic. As a member of the Future Harvest Alliance we work closely with other centres supported by the CGIAR, offering our unique experience and expertise in genetic resources. The System-wide Genetic Resources Programme, hosted by IPGRI, exists to promote and coordinate collaboration in the realm of genetic resources among the centres of the Future Harvest Alliance. And by contributing, for example, to the work programmes of the Convention on Biological Diversity we play a global role in efforts to make more effective use of genetic resources.

IPGRI's partners range from large organizations with a global reach, such as the Food and Agriculture Organization of the United Nations (FAO), including the Commission on Genetic Resources for Food and Agriculture, to small, local civil society organizations through which we reach the ultimate beneficiaries of our efforts. We also work with national programmes, non-governmental organizations and development charities, universities and entrepreneurs and the private sector. We support the CGIAR's System-wide Programme on Participatory Research and Gender Analysis, and strive to ensure that all our work helps to meet the specific needs of women.

In working with partners, our aim is to ensure that IPGRI's innovative research into how agricultural biodiversity can improve lives is taken up and used. IPGRI undertakes research for development, but it is not a development agency. With our partners, however, we aim first for a practical demonstration of successful interventions that will encourage others to

undertake the kind of larger-scale implementation that can power development.

Our partners and stakeholders are remarkably consistent about the challenges the world faces and what IPGRI can do to meet them. They identified the need to address poverty, food security, human health and environmental degradation as the four greatest global challenges. They also agreed that biodiversity can be used on farms and in forests to help meet those challenges. Our task is to justify their faith both in biodiversity—a faith we share—and in IPGRI's ability to help deliver the benefits of biodiversity to those who need it most, the poor.

IPGRI has set itself the task of making a contribution to the achievement of the Millennium Development Goals, especially the goals related to hunger and poverty eradication, maternal health and child mortality, and environmental sustainability. These are ambitious targets that will take massive effort and unmatched commitment on the part of all the people of the world. Against that challenge IPGRI's efforts may seem minor. They are not. They are essential and catalytic. We are convinced that, with our partners, we can help meet the Millennium Development Goals through the better use of agricultural biodiversity.

Our ambition is to lead global efforts to make more effective use of agricultural biodiversity for development, using our special strength in plant genetic resources as the platform for extending into other areas of innovative research. In fulfilling our ambition we intend to develop a portfolio of fewer and larger projects that will enable us to focus our efforts in an effective and efficient manner.

We know that under many circumstances people can and do use agricultural biodiversity to improve their livelihoods, at the same time protecting and even enhancing their environment. That is effectively IPGRI's entry point into promoting greater well-being.

We also know that genetic diversity is a vital resource, the basis of efforts to breed improved crop varieties and livestock. Agricultural biodiversity must therefore be conserved and made available for these efforts, to respond to the ongoing challenges of changed environments and human needs. In addition, the multiple values of agricultural biodiversity need to be further investigated and demonstrated, based on the full participation of farmers and stakeholders, and the results of those investigations must be made widely available so that all can benefit from them. To benefit, however, people and institutions need to have the capacity and skills to take advantage of research results, and they also need to operate within a policy

Millennium Development Goals

At its General Assembly in 2000 the United Nations agreed on several statements that between them clarify and quantify the more diffuse objective of ‘development’. These are the Millennium Development Goals, and they offer definite targets against which one can measure progress towards a more developed world. Below we quote the specific goals to which IPGRI will make a contribution.

1 Eradicate extreme poverty and hunger

Halve, between 1990 and 2015, the proportion of people whose income is less than one dollar a day.

Halve, between 1990 and 2015, the proportion of people who suffer from hunger.

4 Reduce child mortality

Reduce by two thirds, between 1990 and 2015, the under-five mortality rate.

5 Improve maternal health

Reduce by three quarters, between 1990 and 2015, the maternal mortality ratio.

7 Ensure environmental sustainability

Integrate the principles of sustainable development into country policies and programmes and reverse the losses of environmental resources.

environment that is broadly supportive and a social framework that values agricultural biodiversity. And that in turn requires awareness of the benefits of agricultural biodiversity among people and communities, so that they can use those resources to improve their lives. It also requires awareness among policy-makers and others so that they support those efforts in pursuit of greater well-being

By addressing each of these strategic necessities, IPGRI will make it more likely that the world can meet its commitment to the Millennium Development Goals.

IPGRI has always stressed the importance of partnership and capacity development and these will even be more important as the emphasis of our work shifts. From an initial focus in the 1970s on the emergency collection and *ex situ* conservation of threatened crop genetic resources in genebanks, we moved into complementary conservation methods, working with farmers and local communities to ensure that their needs were being met and that they were able to conserve and make use of the agricultural biodiversity on which their livelihoods depended. While recognizing that it was the use of biodiversity that mattered, to some extent we continued to measure our success in terms of the amount of diversity that we had helped to secure for the future, whether in genebanks or on farms.

The conservation of genetic resources, however, gains in value when it is known that the resources are going to be used, and if material is useful it is more likely to be conserved. In the end, it is people who value and make use of biodiversity. In future, therefore, IPGRI's strategy will explicitly acknowledge that it is through the deployment of agricultural biodiversity that people can improve their lives. A crucial point is that in large part the value of agricultural biodiversity rests in the possibilities it offers for responding to future challenges, for example climate change or outbreaks of pests and

diseases. But, while we can foresee that there will be challenges in future, and while we know that agricultural biodiversity has enabled humanity to respond to similar challenges in the past, we cannot know in advance either the exact nature of the challenges or the specific diversity that will enable us to meet those challenges. This unpredictability puts a premium on the insurance value of biodiversity.

Our aim, and the focus of our attention, is to contribute to human well-being, and to do so specifically through the sustainable use of agricultural biodiversity. There are two broad ways to do this. First, the conservation and use of genetic diversity to breed better varieties. And second, the sustainable management and use of the full spectrum of agricultural biodiversity to bring increased productivity and resilience to farm and forest systems, especially in marginal areas.

Sustainable livelihoods

The belief that poverty consists simply of a lack of money has given way to a more complex idea that money is just one of the assets that people use to make a living. Financial capital may indeed be lacking in poor communities. But those communities might be rich in human and social capital; the knowledge, skills and institutions to make use of their assets. They will have physical capital, for example housing. And they have natural capital, which includes not only land and water but also agricultural biodiversity.

Biodiversity is particularly valuable because, as a natural asset, the ‘owner’ generally loses nothing by sharing it. The use of biodiversity, as an element of natural capital, can thus be one component of a strategy to enable people to make better use of their multiple assets in order to secure better livelihoods. Biodiversity can reduce vulnerability to external shocks. It can raise productivity and thus boost financial capital. It can deliver health benefits, enhancing human capital. And it can protect the environment and natural capital.

IPGRI will adopt a sustainable livelihoods approach to the eradication of poverty. The natural capital of biodiversity is the entry point that allows IPGRI to bring its expertise and experience to bear on the challenge of sustainable development.



Agricultural biodiversity

Genetic diversity is the foundation of all agriculture. People would have no ability to select for particular valued traits, such as bigger seeds or more docile animals, without the variability inherent in living things. However, the wide adoption of a small number of improved varieties and breeds, in particular as it occurs in more productive areas, reduces genetic resources by displacing more diverse types. Steps must therefore be taken to conserve diversity, otherwise it will be lost. That is why the conservation of agricultural biodiversity—on farms, in the wild and in secure storage—is essential to the future of agriculture, and thus of humanity.

Biodiversity is a complex concept. There is diversity in the landscape and in ecosystems. Hilltops, slopes and valley bottoms all offer different challenges and opportunities for farmers, who make use of biodiversity to take advantage of those opportunities. All ecosystems, for example arid environments and flood-plains, savannahs and forests, contain biodiversity which exists at several levels. There is the diversity of species, each with different qualities that people can make use of to harvest the surplus productivity of different environments and ecosystems. There is also genetic diversity within species, the source of the adaptability that allows farm and forest systems to respond to changes in the environment, and the raw material too for people to improve productivity through breeding and selection.

Generations of farmers have developed and nurtured the diversity of crops and livestock (including fish and other animals). Forest dwellers use a whole range of species from which they derive a variety of products. The result is one element of agricultural biodiversity,



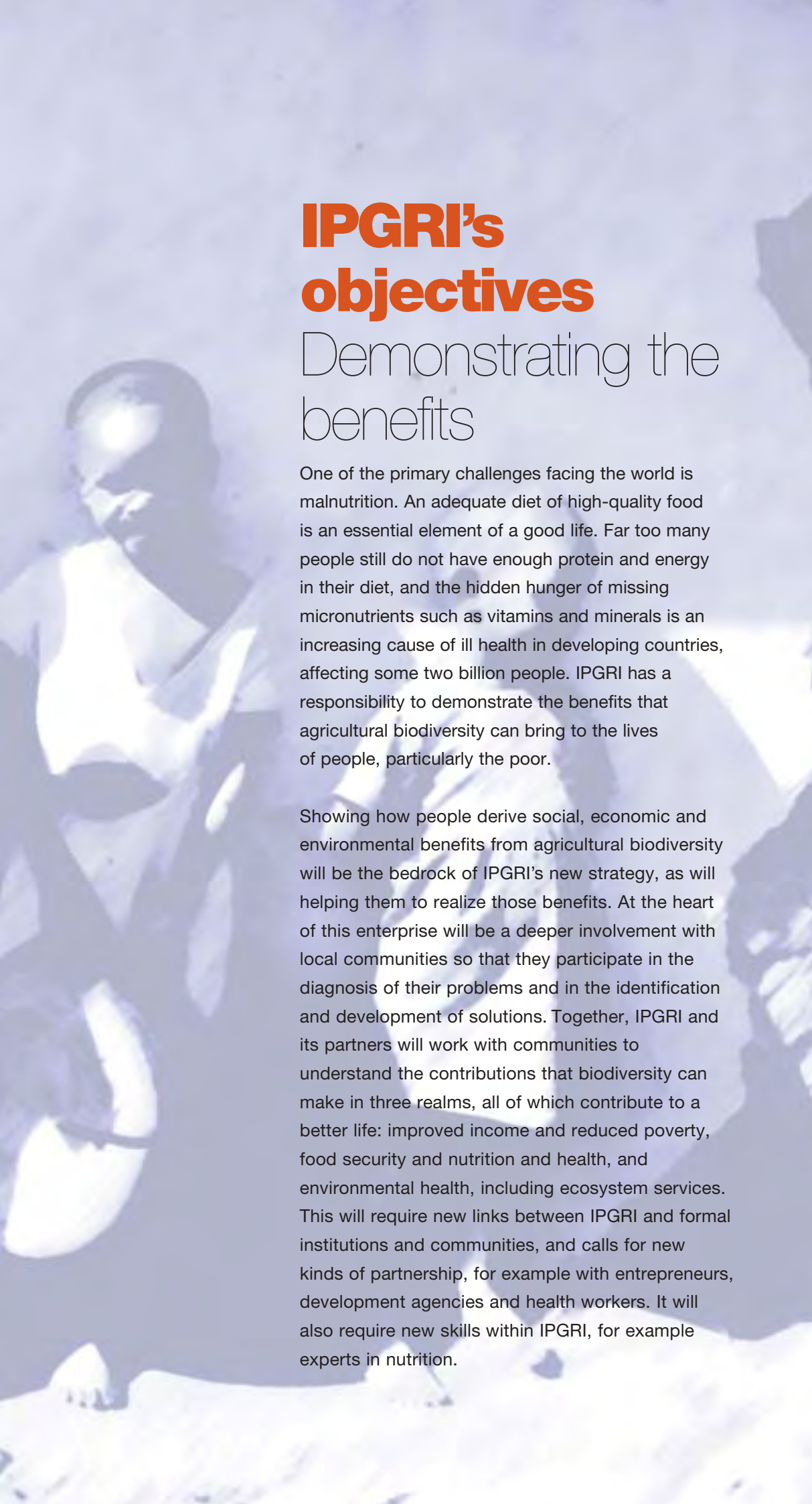
the part managed to a greater or lesser degree by the people who make use of it. Another element is not actively or consciously managed, but is nevertheless vital for productive agriculture. Pollinators, for example, make an enormous direct contribution to successful harvests. Soil microorganisms recycle nutrients and add to soil fertility. Trees and other plants, often regardless of their biological identity, manage water flows and limit erosion. Biodiversity's indirect provision of ecological and environmental services is thus no less important to productive agriculture than is the direct contribution of plants and animals that have been selected for their productivity.

While IPGRI has in the past focused almost exclusively on the genetic diversity of plants we recognize that in future we will need to be able to look more widely at the entire complex of agricultural biodiversity that helps to support human lives.

Agricultural biodiversity at all three levels—ecosystems, the species they contain, and the genetic diversity within species—can contribute to human well-being in several ways. It allows people to exploit several different environments, thus providing more food than if we were more limited in our choices. It adds stability to harvests, smoothing out the temporal fluctuations caused by environmental changes. It makes farm and forest systems more resilient, less affected by shocks and able to recover more quickly from them. It is also especially valuable for use in marginal environments and for poorer farmers, while a more productive agriculture relieves the pressure to bring fragile and natural environments into cultivation. Money invested in such things as irrigation and chemical plant protection can substitute to some extent for biodiversity, but often the only option for the world's poorest people is to make better use of biodiversity. The more effective use of diversity can also be a more sustainable and environmentally friendly solution to the problems of food production.

These are large claims, based on limited studies of natural ecosystems and managed agricultural systems. There is, however, every reason to believe that they will be upheld and expanded as the results of further studies become available. In addition to researching the optimum use and management of agricultural biodiversity, one of IPGRI's crucial future activities will be to demonstrate and quantify the benefits of such diversity for livelihoods and to ensure that the information gathered is put to use widely to increase human well-being.





IPGRI's objectives

Demonstrating the benefits

One of the primary challenges facing the world is malnutrition. An adequate diet of high-quality food is an essential element of a good life. Far too many people still do not have enough protein and energy in their diet, and the hidden hunger of missing micronutrients such as vitamins and minerals is an increasing cause of ill health in developing countries, affecting some two billion people. IPGRI has a responsibility to demonstrate the benefits that agricultural biodiversity can bring to the lives of people, particularly the poor.

Showing how people derive social, economic and environmental benefits from agricultural biodiversity will be the bedrock of IPGRI's new strategy, as will helping them to realize those benefits. At the heart of this enterprise will be a deeper involvement with local communities so that they participate in the diagnosis of their problems and in the identification and development of solutions. Together, IPGRI and its partners will work with communities to understand the contributions that biodiversity can make in three realms, all of which contribute to a better life: improved income and reduced poverty, food security and nutrition and health, and environmental health, including ecosystem services. This will require new links between IPGRI and formal institutions and communities, and calls for new kinds of partnership, for example with entrepreneurs, development agencies and health workers. It will also require new skills within IPGRI, for example experts in nutrition.

IPGRI and its partners will produce a portfolio of knowledge detailing the contributions that agricultural biodiversity can make under a variety of different circumstances. This body of evidence will, we believe, make a compelling case for re-evaluating the role that biodiversity can play in eradicating poverty. It will offer ideas for specific situations and identify more general conclusions about the value of agricultural biodiversity. By illustrating the overall value of biodiversity more clearly, it will contribute to an atmosphere in which the conservation and sustainable use of agricultural biodiversity are viewed as essential and valuable activities.

Deriving greater value from biodiversity—not just socially but economically—will be a challenge. IPGRI recognizes the value of working on market chains, from the farmers who produce the raw materials to the customers who buy finished products. Ensuring that growers can find a market for products based on agricultural diversity will encourage them to use and conserve the diversity on which those products depend. That is one of the motivations behind IPGRI's focus on neglected and underused species, such as medicinal and aromatic plants. It is important, in efforts to promote use and conservation through marketing, to ensure that the needs of all parties are met. While IPGRI is not expert in marketing, we foresee many opportunities to act as a go-between, bringing together actors at all points along the production chain to ensure that diversity is properly marketed to bring sustainable and fair returns to all.

Such activities will be part of a greater effort to ensure that the lessons we learn in our work find wider applicability. IPGRI will liaise with development agencies and other partners to ensure that the benefits of biodiversity as demonstrated in pathfinder projects can be scaled up and put to work as a contribution to the greater goal of sustainable development.

Agricultural biodiversity at work

In Africa, traditional leafy vegetables are at the centre of an interlocking series of mutually reinforcing cycles. They have been the bedrock of good nutrition in traditional diets, so women who grow them and feed them to their families are promoting good health. But they are losing out to less nutritious ‘exotic’ vegetables, especially in urban areas. IPGRI and its partners have worked to promote the value of traditional leafy vegetables and have helped to market the crops in nearby towns, giving rural women the chance to earn money at the same time as giving urban dwellers access to inexpensive, nutritious food. A further benefit is that because they are well adapted to marginal environments, traditional leafy vegetables are more productive at the same time as making fewer demands on farmers’ resources and on the environment.

Other examples span a range of environments and a range of circumstances. In Patagonia, a better understanding of the ecology and diversity of the monkey-puzzle tree (*Araucaria araucana*) has opened development options for the local Mapuche people. The nuts of the tree are a vital food supply for the Mapuche, and quotas are now established flexibly from year to year, which makes the resource more sustainable. Knowing how livestock and wild animals affect seedlings has made it easier to manage regeneration of the forests.

In Nepal, detailed study of the part played by diverse rice varieties in the household economy of villages in different regions has shown new ways to encourage people to make use of diversity within their farming systems. Local farmers have been working with technical experts to incorporate improved material into their own landraces to create new varieties that meet their needs better than any outside variety. These varieties offer the taste people desire with the added yields they need under difficult local conditions.

The International Coconut Genetic Resources Network (COGENT) brings scientists who work on improving coconut together with smallholder farmers who depend on coconut. The partners have adopted a kaleidoscope of methods to enhance the contributions of a single crop to livelihoods. A central approach is to increase the number of ways in which people can make use of their basic biological resources, creating new products and markets and expanding opportunities for existing ones. A network of partners can take a good idea from one part of the world (for example a simple spinning machine to transform waste coconut fibre into a valuable raw material), adapt it to local conditions, and ensure that it is widely adopted.





Biodiversity for income and food security

The most important benefit of biodiversity has been, and will remain, its role in enhancing agricultural productivity. Selection and breeding are the crucial processes that underlie better, more consistent harvests. Our growing knowledge of genetics deepens our awareness of the value of the agricultural biodiversity, and IPGRI will work with its partners to identify threats to existing agricultural biodiversity and to ensure that it is protected, conserved and available for use. Not only breeders but also farmers and their communities should have access to well-characterized material.

The approaches we take will be as diverse as the raw materials. For example, monitoring changes in the diversity of farming systems is essential to provide insights into where conservation efforts are needed, but simple tools that allow communities to keep tabs on the diversity in their systems are still lacking. Enabling communities to make greater use of biodiversity in their efforts to improve productivity will be a focus of IPGRI's strategy. This will address not only existing crops but also the wild relatives of crops, trees and other forest species, and could extend to livestock and animal breeds. For farmers who can ill-afford pesticides and other costly inputs, the effective use of agricultural biodiversity provides opportunities to protect their harvests from the ravages of pests and diseases and from environmental stresses such as drought or cold.

IPGRI sets its priorities in consultation with partners in the regions. In Asia and Latin America, for example, IPGRI scientists have worked with partners to raise the profile of tropical fruits. Farmers and scientists have



together identified new species and new varieties to meet well-researched market opportunities, improving incomes and increasing the diversity on farms.

IPGRI also has a specific responsibility for three globally important crops: banana, coconut and cacao. Banana is the fourth most important staple crop in the tropics, where it represents a vitally important source of food and income for millions of smallholder farmers. The International Network for the Improvement of Banana and Plantain (INIBAP) has been one of IPGRI's three programmes to date, and its work will continue in the future. INIBAP and its partners have made huge contributions to innovative research on bananas, for example in breeding and genome studies, and have been instrumental in making improved varieties widely available to farmers.

Coconut, too, is a vitally important crop for poor farmers in tropical areas, with more than 96% of the world harvest being grown on small farms. Through COGENT (the International Coconut Genetic Resources Network), IPGRI has enabled coconut farmers in almost 40 countries to derive greater benefits from their crop. Research into improved methods of tissue culture, the multiplication and distribution of high value varieties and the

development of new products: these are just some of the ways in which COGENT's members and partners have helped communities make the most of their natural resources.

More recently IPGRI has added cacao, another crop that represents an important source of income for smallholder farmers, to its portfolio of 'commodity' species. It will continue to work with its partners in support of these crops, ensuring that their genetic diversity is maintained, studied and made available so that it can be used to improve productivity, directly affecting the lives of millions of smallholder farmers.

Diversity and development

The productivity of farms and forests must increase to keep pace with the growth of populations. IPGRI recognizes this and will work with partners to increase productivity. Classically, the breeders' approach to greater productivity has been to use the genetic resources of agricultural biodiversity to create improved varieties that can deliver higher yields. This was the foundation of the Green Revolution, which delivered enormous benefits: although world population has doubled since 1961, the amount of food produced per person has increased by 25%. More effective and broader use of genetic resources for breeding will continue to deliver benefits in future, and IPGRI will work with farmers, genebank managers and breeders to ensure that genetic resources can be used to improve varieties.

There is another approach that may be more appropriate for farmers in marginal areas, and that is to increase the agricultural diversity of their systems by working with them to bring in new varieties and species and suitable livestock. Studies have shown that farmers in marginal areas conserve biodiversity because they value its many aspects, especially the resilience it can contribute to their production systems. IPGRI and its partners will encourage the use of agricultural biodiversity to improve and secure yields in a manner that does not threaten existing diversity.

Demonstrating the value of this kind of diversity in improving productivity will add to the impetus to conserve biodiversity. Managing agricultural biodiversity on farms and conserving it in collections of genetic resources are complementary approaches. Together they address the need for the continued future availability and use of agricultural biodiversity to improve productivity both by breeding improved varieties and by improving farm ecosystems.



A young child with dark hair is sitting in a field of tall, dry grass. The child is looking directly at the camera with a neutral expression. The background is a soft-focus field of similar grass, creating a sense of being in a rural or agricultural setting. The overall tone is warm and natural.

Researching agricultural biodiversity

Research will be of the utmost importance in pursuing the deployment of diversity for human development. Without good research, how will anyone become aware of the potential of agricultural biodiversity? However, the subject is so complex that the need to engage a wide range of stakeholders and to bring a wide range of disciplines to bear on the research agenda is self-evident. The agenda, however, will need to be set in concert with those who will ultimately make use of the results. International, national and local bodies will be vital partners, never forgetting that the farmers and their families for whom we are working need to have a strong voice in planning and carrying out research. IPGRI will bring the stakeholders together to develop and seek funding for innovative research projects that underpin the conservation and use of diversity and that will document the ways in which agricultural biodiversity can improve peoples' lives. We will manage those projects to ensure that all the stakeholders' objectives are met.

Some of this research will extend work already carried out, for example a better understanding of the scientific and technical requirements for the efficient management of genetic resources stored in genebanks. The material in genebanks will gain greater value as new biological techniques identify how genes and pathways affect important traits, and IPGRI will use genomics and bioinformatics in order to ensure that these cutting-edge tools can be used to improve productivity for poor farmers. IPGRI has already taken on this role, as a partner in the CGIAR Generation Challenge Program to unlock genetic diversity, and as the instigator of the Global *Musa* Genomics Consortium. This research will have wide applicability



in crop improvement. The information produced, with that from other efforts such as the rice genome, will spur the development of better varieties of all monocotyledonous crops, from bamboo to yam, many of which are particularly important for poorer farmers.

The banana genome consortium is a model in other ways too, because it shows how IPGRI can use its expertise and influence to bring partners together and set the agenda for future scientific research. Further studies on, for example, cryopreservation and the management of genebanks will lead to more productive alliances with plant breeders in the Future Harvest Alliance and elsewhere. Questions of gene flow, biosafety and other researchable issues related to genetically modified organisms are also part of IPGRI's scientific remit and these efforts will continue and grow. Research will also be needed to deliver better nutrition through more diverse diets.

These and other projects will call on the skills of a wide range of scientists, but scientists are not the only type of investigators. Nor are their knowledge systems the only ones that matter. The human and social capital that enables communities to take advantage of diversity has for a long time been neglected and should continue to play a central role in the management and use of agricultural biodiversity. Working with farmers and other partners, IPGRI has pioneered the use of community biodiversity registers and other tools that enable people to capture and document for themselves the diversity they use and the traditional knowledge that allows them to use it. This effort will be extended and enhanced, ensuring that the lessons learned in, for example, Nepal can be adapted and applied to traditional knowledge in communities around the world.

For some investigations, local communities will need the assistance of others with more technical kinds of





expertise. In this more formal research the specific questions still need to be developed, but some broad ideas are apparent. What factors affect the maintenance of diversity in farm and forest systems and in genebanks? How can biodiversity in agriculture and forestry contribute to better nutrition? How can damaged environments and the diversity they once contained be restored? In what ways do local seed systems contribute to the use and flow of genetic diversity? These and other questions need answers. But answers that languish on shelves might as well not exist. To be useful, knowledge must not only be generated, but must also reach those who need it.

IPGRI's publications are highly appreciated by scientists and development workers and the centre will continue to play an important role in compiling, reviewing and synthesizing information in order to make it more widely available and applicable. This will take many forms, from publication series that deal with single, narrowly focused issues to wide-ranging compendia of various kinds. Information will be distributed in many different forms, each appropriate

to different sets of users. IPGRI will also continue its support for a gateway to give users around the world access to information about hundreds of thousands of individual samples of conserved agricultural biodiversity, in ways that fully meet their needs.

Merely having access to information, however, is not enough. People also need to be able to act on that information.

An evolving research agenda

Within the scope of IPGRI's overall programme, the details of specific research topics to achieve its objectives will be worked out in close consultation with partners. However, suitable areas for IPGRI's research could include:

- Complementary management strategies to ensure the optimal conservation of genetic resources.
- The use of bioinformatics and genomics to improve breeding and enhance productivity.
- How genetic resources might be used to help mitigate the effects of global challenges such as climate change and desertification.
- The contributions of diversity-based agriculture to nutrition and health in rural areas and towns.
- The potential effects of genetically modified organisms on genetic resources.
- Cultural practices that affect the use and conservation of agricultural biodiversity.
- How economic considerations impact the use and conservation of agricultural biodiversity.
- How people use undomesticated and semi-domesticated species to improve their well-being.
- How new developments in science might change the role of genebanks.
- Strategies to assess, cope with and reverse genetic erosion.





Enabling and empowering

IPGRI has always tried to ensure that it is both a practitioner and a facilitator; training and capacity development are integral to all projects. Making sure that national programmes and others have the skills and institutions to effectively deploy biodiversity for development will continue to be an important task. IPGRI also recognizes that it needs to move beyond its traditional borders and to nurture linkages among different sectors. For example, those in government responsible for, say, health on the one hand and fiscal matters on the other should recognize that by working together and promoting the use of biodiversity they can each contribute more effectively to human development.

Actually delivering professional training directly is becoming a less important role for IPGRI, although we will continue to include capacity development in projects and to support postgraduate training and research. However, as levels of national competence increase, it becomes easier and more effective for national programmes to assist one another in regional and even global groupings. The corps of IPGRI-trained alumni is a valuable resource that can help to spread best practices and to further develop capacity.

Communities too will benefit from capacity development, although their needs will be very different from place to place. Farmer-friendly approaches to capacity development are essential, which is why partnerships with local groups who know and understand the territory will continue to be important. A new direction to explore will be to foster links between communities in different parts of the world, because while the details may differ, the kinds of challenge they face and the solutions they devise are likely to resonate and spark new ideas.



IPGRI also recognizes the importance of making use of others to spread our efforts more effectively. Thus training trainers is an important part of the strategy. So too is working with schools and universities to help them put ideas about agricultural biodiversity in their curricula. Again, the point is to help teachers and lecturers to become advocates for agricultural biodiversity and so to multiply our efforts. IPGRI will work with partners to develop model course materials, which others will then adapt to local conditions and distribute, using whatever means are most appropriate to ensure that future generations understand the value and importance of biodiversity in farm and forest systems.

However, even when people do understand the benefits of biodiversity and have the capacity to make use of it to address livelihood issues, there can still be problems if the policy environment within which they live and work fails to support their efforts.

Core values

As individuals and as an organization, we believe in, and strive to adhere to and apply, a set of core values consistently in our work. These values guide the choices we make in our programmes and the way we operate internally and with partners.

Diversity of biological systems and of people: We value and strive to protect the diversity of farm and forest systems, and our work aims to make these systems more productive by increasing the use that people make of agricultural biodiversity. We respect diversity of gender, culture and perspective in our staff, in the partners and institutions with whom we work and in the communities we serve.

Innovation and learning: We value innovation and aim always to be at the cutting edge of the science of agricultural biodiversity. We aim to manage ourselves in a way that fosters innovation, learning and rapid adaptation to the needs of an ever-changing world.

Agricultural biodiversity as an asset: We believe that agricultural biodiversity is an asset that people can use to improve their lives.

Excellence: We constantly challenge ourselves to achieve higher levels of performance and we aim to constantly reaffirm our reputation for excellence.

Responsibility for development: We recognize our responsibility to contribute to human development and we aim to ensure that our work focuses on real problems with a responsible approach to the use of public funds.

Sustainability: Our projects promote sustainable agriculture, which provides benefits in the short term without threatening human well-being or the environment in the long term. As an organization we strive to minimize any negative environmental effects of our work.

Integrity: We are honest and transparent in what we say and do, and we accept responsibility for our collective and individual actions.

Partnership: We foster partnerships between different sectors and disciplines and build bridges between community needs and formal-sector research priorities. As an international centre we strive to work closely with a wide range of partners.





Supportive policies

Two factors set the tone when IPGRI (as the International Board for Plant Genetic Resources) started its work in the early 1970s. First, crop diversity was under severe threat as a result of the widespread uptake of improved varieties and technical improvements to agriculture, such as irrigation. Second, plant genetic resources were seen as the common heritage of humanity. The priority, therefore, was to collect samples of agricultural biodiversity and store them in secure genebanks, at the same time guaranteeing that the samples and information about them would always be freely available. Subsequently the international legal and policy environment shifted with the adoption of the Convention on Biological Diversity (CBD) and other developments, which reaffirmed that states have the right to control access to their natural resources, including the genetic resources that are part of agricultural biodiversity. As a result the flow of raw material needed to sustain agricultural improvements slowed down, sometimes quite drastically.

The FAO's Commission on Genetic Resources for Food and Agriculture asked IPGRI to provide technical support during the negotiation of the International Treaty on Plant Genetic Resources for Food and Agriculture, which came into force on 29 June 2004. The Treaty's multilateral system for access and benefit sharing (which builds on concepts outlined in research papers from IPGRI) will be more efficient than the myriad agreements that a purely bilateral system would require, and will help to ensure that any benefits derived from the use of agricultural biodiversity will be equitably shared. IPGRI will continue to play its well-recognized leadership role in helping the parties to the Treaty to negotiate some of



the unresolved issues to do with its implementation, by providing impartial technical advice to help guide decision-making.

The Treaty is the backdrop against which IPGRI's future activities in the policy sphere will be played. The main purpose of this policy work will be to foster an enabling environment in which people will be free to make use of agricultural biodiversity to improve their lives. This will require us to collaborate with national and other partners to understand the impact of policy interventions on the availability of biodiversity and the extent to which people can take advantage of it. For example, seed quality regulations may affect the operation of informal seed systems, upon which poor and marginal farmers often depend for the bulk of their planting materials.

Policy-makers need to recognize the value of biodiversity for sustainable agriculture and poverty alleviation, and to actively incorporate favourable elements into their policies and laws governing such issues as access to and benefits from genetic resources and agricultural biodiversity, intellectual property rights, land use, trade questions, traditional knowledge and the like. IPGRI will work to raise the profile of agricultural biodiversity with appropriate international bodies—such as the Secretariat of the Convention on Biological Diversity, the World Trade Organization, and the World Intellectual Property Organization—to promote the value of agricultural biodiversity. There will also be a role for IPGRI as a facilitator, bringing together different parties to ensure coherence among different policy areas with respect to agricultural biodiversity.



IPGRI will assume a leadership role in research on policy issues as they relate to genetic resources and agricultural biodiversity. An important aspect of this, as of all IPGRI's efforts, is to go beyond doing the research ourselves and to develop the capacity of



those involved to analyze and implement their own policies, laws and practices. This will require the creation at a variety of levels of skilled interdisciplinary cadres, able to undertake the multi-stakeholder, multi-sector, multidisciplinary efforts needed to implement sound policies. It will also require alerting policy-makers to the importance of biodiversity in meeting people's needs and the impact that policies can have on that process. Ultimately IPGRI would like to see the value and use of biodiversity enshrined in poverty reduction strategic plans, public health efforts and human development policies.

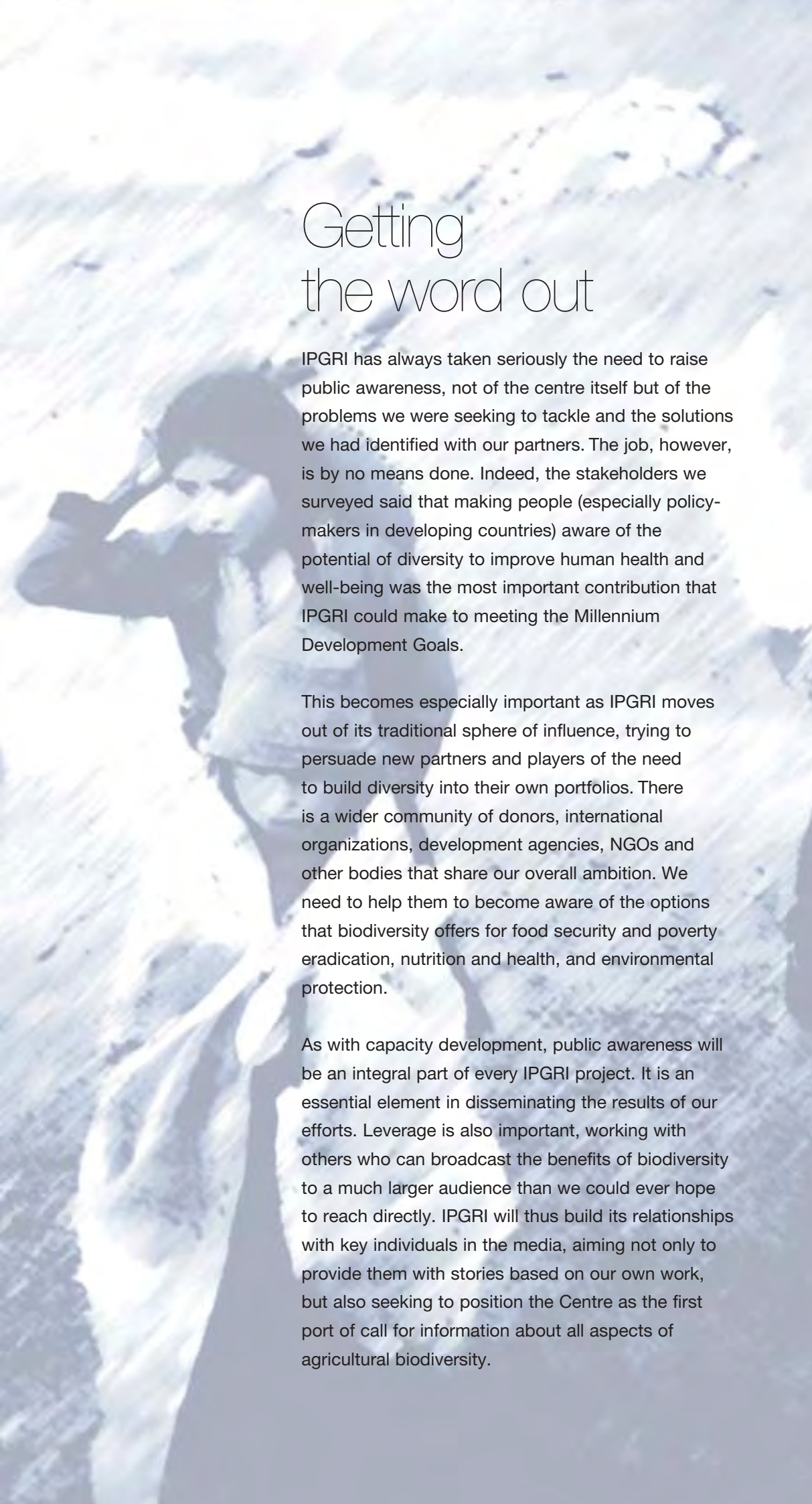
That task will be made much easier if policy-makers and the people they serve are fully aware of the benefits of biodiversity, which brings us full circle to the starting point of the IPGRI strategy.

Continuing to support *ex situ* conservation

Genebank collections remain extremely important for the future development of agriculture, and IPGRI will continue to be involved in the science and management of *ex situ* collections. The International Treaty on Plant Genetic Resources for Food and Agriculture recognizes the importance of collections of crop genetic diversity, including those held by the Future Harvest Centres in trust for humanity. IPGRI has been instrumental in building up *ex situ* collections and, through the System-wide Genetic Resources Programme, in helping the Future Harvest Centres to ensure that the collections are managed to the highest standards and remain freely available to all. That effort is moving into a new phase with the Global Crop Diversity Trust, a collaborative initiative of IPGRI (on behalf of the Future Harvest Alliance) and FAO to establish an endowment fund that will secure the future of *ex situ* collections. The Trust works within the framework of the Treaty as an essential element in the Treaty's funding strategy.

IPGRI will continue to be closely associated with the Trust, which will be an important conduit through which we can address the conservation of agricultural biodiversity. IPGRI will provide the Trust with scientific and technical expertise, thereby strengthening *ex situ* conservation efforts. The Trust, IPGRI and other Future Harvest Centres will thus be part of the development of the rational global genebank system that has long been seen as an essential tool for the effective conservation and deployment of agricultural biodiversity.





Getting the word out

IPGRI has always taken seriously the need to raise public awareness, not of the centre itself but of the problems we were seeking to tackle and the solutions we had identified with our partners. The job, however, is by no means done. Indeed, the stakeholders we surveyed said that making people (especially policy-makers in developing countries) aware of the potential of diversity to improve human health and well-being was the most important contribution that IPGRI could make to meeting the Millennium Development Goals.

This becomes especially important as IPGRI moves out of its traditional sphere of influence, trying to persuade new partners and players of the need to build diversity into their own portfolios. There is a wider community of donors, international organizations, development agencies, NGOs and other bodies that share our overall ambition. We need to help them to become aware of the options that biodiversity offers for food security and poverty eradication, nutrition and health, and environmental protection.

As with capacity development, public awareness will be an integral part of every IPGRI project. It is an essential element in disseminating the results of our efforts. Leverage is also important, working with others who can broadcast the benefits of biodiversity to a much larger audience than we could ever hope to reach directly. IPGRI will thus build its relationships with key individuals in the media, aiming not only to provide them with stories based on our own work, but also seeking to position the Centre as the first port of call for information about all aspects of agricultural biodiversity.



That will not, however, preclude us from engaging with parliamentarians and policy-makers on a much more personal level. These are busy people, with important tasks to carry out on behalf of the people they represent. Nevertheless, we believe that a greater awareness of the many values of agricultural biodiversity will help them to carry out those tasks. Working with partners new and old we will organize briefings and site visits so that decision-makers and opinion formers can experience for themselves the impact of diversity on people's lives.

Having done so, we are confident that they will make it easier for people to enjoy greater well-being and sustainably increased food security by deploying agricultural biodiversity on farms and in forests.

This booklet illustrates the directions IPGRI will follow in pursuing its new strategy. It does not cover the details of particular activities or the structures and organizational changes that will be needed to implement the strategy. Those will be reflected in a new project portfolio, a new implementation framework, and a new Medium Term Plan.

We have set ourselves a formidable challenge: to contribute to a world in which people today and in the future enjoy greater well-being through increased incomes, sustainably increased food security and nutrition, and greater environmental health, made possible by conservation and the deployment of agricultural biodiversity on farms and in forests.

With the support of all our partners and stakeholders, IPGRI can help make that vision a reality.

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