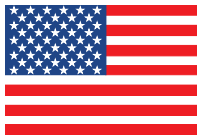




A Partnership for Research and Development The United States of America and the CGIAR



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For more than 35 years, the United States of America (USA) and the Consultative Group on International Agricultural Research (CGIAR) have enjoyed a dynamic and rewarding partnership.

The USA helped found the CGIAR, an evolving alliance, whose 64 members support 15 international agricultural research centers. Today, the USA remains a staunch supporter of the CGIAR and strongly promotes its reform program, which is strengthening accountability and coherence across the system.

Both US development assistance policy and the CGIAR's mandate emphasize investment in agricultural research as a driver of economic growth. Science-based solutions to reduce poverty and hunger, sound management of natural resources, strengthening of research capacity and expanded trade opportunities for farmers are shared priorities.

The Centers supported by the CGIAR receive substantial assistance from the USA. The US Agency for International Development (USAID) provides central or "core" funding as well as assistance through bilateral and regional programs. The US Department of Agriculture (USDA) also provides support

and is an important research partner. In addition, the CGIAR benefits from the contributions of major private foundations (including Ford, Bill and Melinda Gates, Rockefeller and Kellogg) and from collaboration with other US partners, including private companies, think tanks and centers of excellence working on agricultural, food, and environmental issues.

From the earliest days of the Green Revolution, the CGIAR Centers have maintained close ties with US universities. These relationships have been critical to the success of CGIAR research. Today, nearly 100 US universities have research links with Center scientists. In addition, US land grant universities and CGIAR Centers jointly implement collaborative research programs.

Many US citizens occupy leadership and research positions in the CGIAR, contributing valuable knowledge and expertise in the search for solutions to problems faced by poor farmers. The Directors General of five CGIAR Centers are from the USA, and the US hosts the International Food Policy Research Institute (IFPRI) in Washington, DC.

Strong US Commitment to CGIAR Research Priorities

US support for the CGIAR embraces diverse activities and issues, as illustrated by the examples that follow.



Crop Improvement USAID provides substantial support for the Centers' efforts to increase crop productivity, and this work is leading to substantial gains. New maize varieties developed by the International Maize and Wheat Improvement Center (CIMMYT, its Spanish acronym), for example, contribute US\$1 billion annually to the economies of developing countries. Improved, drought –tolerant maize, adapted to harsh environments in southern Africa, offers 30 percent higher yields and is today planted on more than 250,000 hectares. As the Centers intensify their use of biotechnology to develop crops that are tolerant to heat, drought, and pests, collaborative research with US scientists in the public and private sectors will play an increasingly important role.

High Value Agricultural Products There are growing opportunities for rural families to improve their livelihoods through small-scale businesses centering on livestock products, fishponds, vegetables, tropical fruits and other high-value products. For example, chocolate producers in the USA and elsewhere are joining forces with the International Institute of Tropical Agriculture (IITA) and the World Agroforestry Centre (ICRAF) in support of the Sustainable Tree Crops Program. Recognizing the economic potential of high-value agricultural products, the program is helping small farmers achieve sustainable production and earn the income they need for food, education, health care and other necessities.



Biodiversity Conservation USAID is a principal supporter of the CGIAR's efforts to safeguard the world's agricultural legacy. More than 600,000 samples of crops and wild relatives are held in trust by eleven CGIAR Centers. This invaluable collection of genetically diverse seeds is freely available to researchers around the world and provides the building blocks for future global food security. The USDA's National Plant Germplasm System is a major partner of the CGIAR genebanks, sharing capacity and expertise in conservation and information management. CGIAR Centers are also reaching out to Conservation International, the World Wildlife Fund and other nongovernmental organizations (NGOs) based in the USA. Through partnerships with these organizations, CGIAR scientists are helping communities protect forests, coral reefs and other vital ecosystems.

Sustainable Management of Natural Resources Agricultural research underpins wise stewardship of the environment. USAID and its Missions support the efforts of the CGIAR to develop new technologies and methods for improved natural resource management and to promote the creation of sensible policies. In this work, the CGIAR Centers emphasize improved environmental governance, the development of markets for environmental services and other innovative approaches to address global challenges, such as deforestation and global climate change.

Reduced Poverty and Hunger USAID is a leader in supporting policy research aimed at protecting vulnerable families from hunger and expanding their access to markets. In Africa, USAID Missions are working with the CGIAR and other partners to improve policies, so that farmers can gain easier access to new technologies and market their surplus production more efficiently.



A Snapshot of CGIAR Impacts Made Possible by US Support

Relief and Recovery Helping vulnerable populations recover in the aftermath of conflicts or natural disasters has been a significant focus of the USA-CGIAR partnership.

- Across Africa, millions of farm families have access to highly productive, CGIAR-derived seed, thanks to USAID-sponsored alliances in which CGIAR Centers have worked closely with organizations, such as CARE, World Vision, Catholic Relief Services and Save the Children.
- In an effort to restore agricultural production and food security in Afghanistan, a USAID-funded consortium, led by the International Center for Agricultural Research in the Dry Areas (ICARDA), is supporting local partners, as they work to provide farmers with high-quality seed and technical assistance. More than 3,500 tons of improved wheat seed has already been distributed to 75,000 farmers.

Cutting-edge Science Biotechnology is providing useful tools and opening up new horizons for the CGIAR Centers and their partners in the fight against hunger, poverty and environmental degradation.

- Partnerships with US universities, private companies (including Ceres, Dupont-Pioneer and Monsanto) and research organizations, such as the Donald Danforth Plant Science Center, make critical contributions to CGIAR Center research. This collaboration focuses on improving resistance to crop pests and diseases, developing livestock vaccines and addressing the technical and policy aspects of biosafety regulatory systems.
- CGIAR Centers are active partners in many agricultural biotechnology programs supported by the USA. The Centers often act as a bridge, linking advanced research institutions in the USA with national agricultural research systems in Asia, Africa, Latin America and the Caribbean.

Initiative to End Hunger in Africa The US President's Initiative to End Hunger in Africa emphasizes the importance of agriculture in the fight to alleviate hunger and poverty.

- CGIAR Centers are key partners in the Initiative, which promotes rapid and substantial increases in agricultural productivity and in the incomes of small farmers. With USAID support, IFPRI and other Centers have developed the Strategic and Analytical Knowledge Support System to help African and international organizations improve decision making. In this and other ways, the Initiative contributes to the Comprehensive Africa Agriculture Development Programme, sponsored by the New Partnership for African Development.

The Bottom Line: Results That Count

Feeding the World The demand for rice, the world's most important food crop, is expected to double in the next 25 years. USAID, USDA, the Rockefeller Foundation and US universities have provided

critical financial and scientific support for CGIAR rice research. The economic benefits of the resulting improved varieties amount to \$10.8 billion annually, about 150 times the research investment made by the International Rice Research Institute (IRRI) and its partners in national agricultural research systems.

Sustainable Production The vast Indo-Gangetic Plain produces 45 percent of South Asia's food and is home to 400 million poor people. One of the most successful CGIAR partnerships is the US-supported Rice-Wheat Consortium, which is helping enhance agricultural production, raise the incomes of poor farmers and reduce land degradation in the region. The Consortium unites the national research programs of Bangladesh, India, Nepal and Pakistan with five CGIAR Centers. Among the Consortium's main achievements is its successful promotion of zero-tillage cropping, which has increased wheat yields by 10–17 percent, compared with conventional tillage, cut production costs by \$65 to \$180 per hectare (through lower use of fuel and agrochemicals) and resulted in more efficient use of water. By 2005, zero-tillage systems covered more than 2.1 million hectares or more than 5 million acres.



Improved Nutrition In connection with the Initiative to End Hunger in Africa, the USA supports the CGIAR's HarvestPlus Challenge Program. Involving more than 40 organizations, the program seeks to alleviate hunger and malnutrition by developing varieties of staple foods (such as maize, beans and sweet potato) that are rich in micronutrients (specifically vitamin A, iron and zinc) through a process called "biofortification."

Global Benefits While designed to help improve the livelihoods of people across the developing world, US support for CGIAR research generates direct benefits for this country as well. Much of the wheat and rice grown in the USA involves varieties developed by the CGIAR Centers. A University of California-IFPRI study showed that, for each dollar invested by the USA in international wheat research, American consumers and farmers reap \$190 in economic gains. Globally, every dollar invested in CGIAR since 1971 has produced \$9 worth of additional food.



***Nourishing the
Future through
Scientific
Excellence***

The Consultative Group on International Agricultural Research

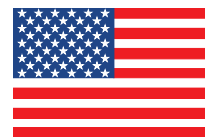
The Consultative Group on International Agricultural Research (CGIAR) is a strategic alliance of countries, international and regional organizations, and private foundations supporting 15 international agricultural research Centers that work with national agricultural research systems, civil society organizations and the private sector. The alliance mobilizes agricultural science to reduce poverty, foster human well-being, promote agricultural growth, and protect the environment. The CGIAR generates global public goods that are available to all.

Agriculture, the key to development

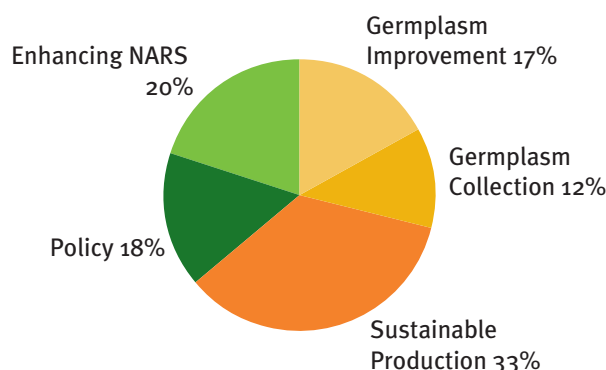
In a world where 75 percent of poor people depend on agriculture to survive, poverty cannot be reduced without investment in agriculture. Many countries with strong agricultural sectors have a record of sustained investments in agricultural science and technology. The evidence is clear—investment in agricultural research for development generates growth, reduces poverty and protects the environment.

Agricultural research benefits people and the planet

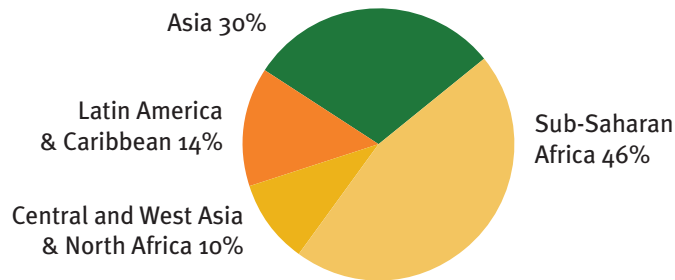
Agricultural research for development has a record of delivering results. The science that made possible the Green Revolution of the 1960s and 1970s was largely the work of CGIAR Centers and their national agricultural research partners. The scientists' work not only increased incomes for small farmers, it enabled the preservation of millions of hectares of forest and grasslands, conserving biodiversity and reducing carbon releases into the atmosphere. CGIAR's research agenda is dynamic, flexible, and responsive to emerging development challenges. The research portfolio has evolved from the original focus on increasing productivity in individual critical food crops. Today's approach recognizes that biodiversity and environment research are also key components in the drive to enhance sustainable agricultural productivity. Our belief in the fundamentals remains as strong as ever: agricultural growth and increased farm productivity in developing countries creates wealth, reduces poverty and hunger and protects the environment (see graphic, CGIAR's Evolving Research Agenda, page 6).



CGIAR Priority Investments 2005



CGIAR Expenditure by Region 2005



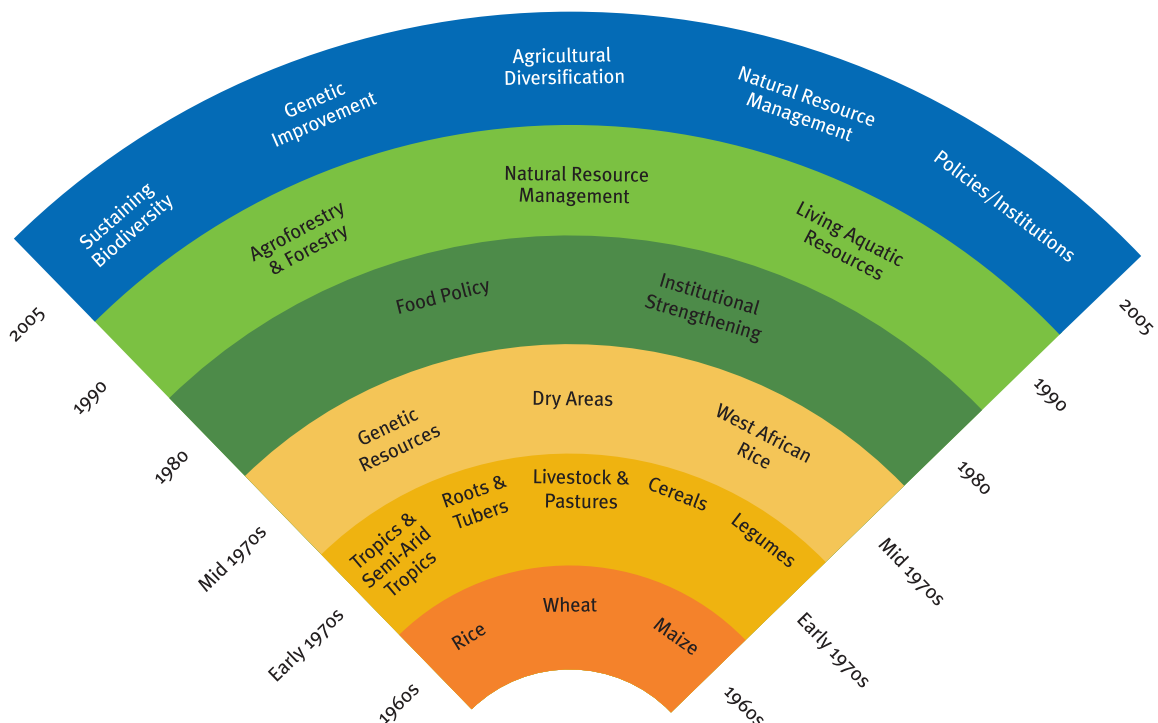
Agricultural research is delivering results

The CGIAR's more recent outstanding achievements include:

- Releasing Quality Protein Maize (QPM) varieties in 25 countries. QPM are currently grown on more than 650,000 hectares
- Transforming agriculture in East and West Africa through the release of New Rices for Africa (NERICAs). It is estimated that NERICAs are planted on 130,000 hectares across Africa, including approximately 60,000 hectares in Guinea and about 10,000 hectares in Uganda



CGIAR's Evolving Research Agenda



- Selectively breeding a GIFT strain of tilapia which shows an approximate growth rate gain of 70%
- Training over 75,000 developing country scientists and researchers
- Reducing pesticide use in developing countries by promoting integrated pest management and biological control methods
- Enabling African producers to access international pigeonpea markets
- Releasing over 45 bean varieties, developed from CGIAR germplasm across Latin America
- Improving forage grasses developed by CGIAR researchers and partners which are currently grown on over 100 million hectares in Latin America
- Planting fodder shrubs in Kenya and increasing smallholder dairy farmers' income by \$166 per annum

These successes notwithstanding, future challenges are daunting. World population is expected to reach 9 billion people by 2050. Food demand is expected to more than double in a similar time frame. Some 30 percent of irrigated lands are already degraded, and water use is expected to increase by 50 percent over the next 30 years. Science-based solutions for sustaining productivity increases while protecting ecosystems are key to addressing these challenges.

Increasing sustainable productivity, strengthening science-for-development partnerships, protecting the environment



The CGIAR was created in 1971. Today more than 8,500 CGIAR scientists and staff are working in over 100 countries. CGIAR research addresses every critical component of the agricultural sector including—agroforestry, biodiversity, food, forage and tree crops, pro-environment farming techniques, fisheries, forestry, livestock, food policies and agricultural research services. Thirteen of the Centers are located in developing countries. Africa continues to be a priority for CGIAR research. CGIAR research partnerships help achieve the Millennium Development Goals and support major international conventions (Biodiversity, Climate Change, and Desertification).

The CGIAR has five areas of focus

- Sustainable production (of crops, livestock, fisheries, forests and natural resources)
- Enhancing National Agricultural Research Systems NARS (through joint research, policy support, training and knowledge-sharing)
- Germplasm Improvement (for priority crops, livestock, trees and fish)
- Germplasm Collection (collecting, characterizing and conserving genetic resources—the CGIAR holds in public trust one of the world's largest seed collections available to all)
- Policy (fostering research on policies that have a major impact on agriculture, food, health, spread of new technologies and the management and conservation of natural resources).

Forging New Partnerships: CGIAR Challenge Programs in action

Challenge Programs are new high-impact, research for development programs that tackle major global development challenges through expanded partnerships. Four Challenge Programs are being implemented since 2004:

- “Generation” is unlocking crop genetic diversity through the application of comparative biological knowledge in 11 crops. There are 14 partner institutions involved. Program updates for the first year include genotyping a composite germplasm set representing global genetic resources for a first tier of eleven crops; development of a common phenotyping framework of techniques, plant development stages and parameters to enable cross-species comparison; validation and development of pre-existing markers for drought tolerance and the establishment of molecular breeding communities of practice; design of Generation CP information platform system for genetic resources, genomic and crop information systems and internal project workshops. (www.generationcp.org)



- “HarvestPlus” is an international alliance of over 40 institutions breeding crops with improved micronutrient content. Progress during the first phase of the project focused on: exploring the genetic variation for iron, zinc and B-carotene in rice, wheat, maize, cassava, beans and sweetpotato germplasm; applied breeding; testing the stability of micro-nutrient expression; and dissemination of seed of basic breeding materials and advanced lines to collaborators. New initiatives include the feasibility of a HarvestPlus China program, similar to HarvestPlus and to be funded by the Chinese government and other donors. (www.harvestplus.org)
- “Water and Food” is improving water productivity in agriculture in nine river basins (Andean system, Indo-Gangetic, Kharheh, Limpopo river, Mekong river, Nile river, Sao Francisco, Volta, Yellow river). In its first year, 33 research projects led by 18 different institutions involving over 150 partners have been launched with a total investment of \$60 million. A diverse set of activities are underway, including research programs on coastal management in Bangladesh and Vietnam, exploring and evaluating supplemental irrigation techniques in Syria, and improvements in rain water and nutrient use efficiency in Niger. (www.waterandfood.org)
- The Sub-Saharan Africa Challenge Program (SSA CP) developed by a CGIAR partner, the Forum for Agricultural Research in Africa (FARA), is focusing on jumpstarting agricultural development in Sub-Saharan Africa. Fully supported by the CGIAR, this is the first

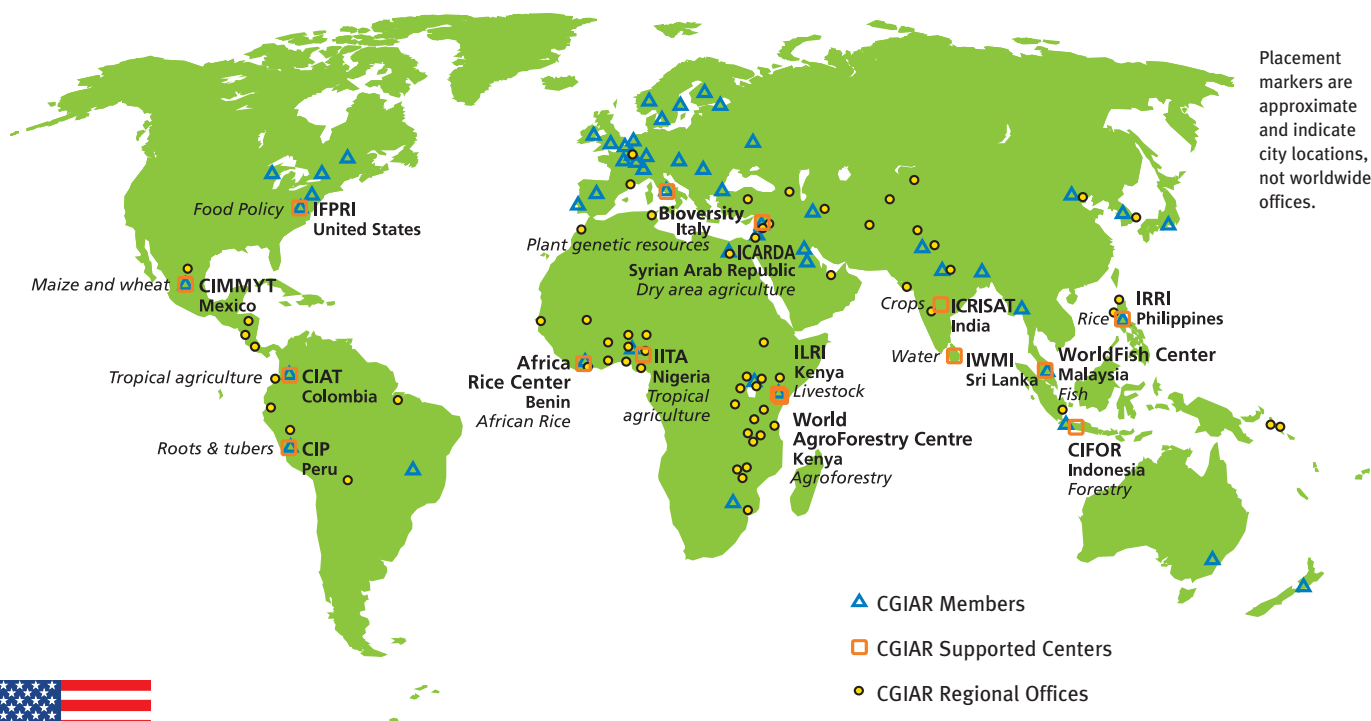
Challenge Program with responsibility for implementation assigned to a partner institution in Africa. The SSA CP is promoting research that will provide options for smallholders to improve input and output markets for smallholder and pastoral produce, and to intensify use of limited resources while maintaining food security and the use of natural resources in a sustainable way. The research will be conducted by Pilot Learning Teams with the communities at different Pilot Learning Sites, which have been already selected through a participatory process. (www.fara-africa.org)

The CGIAR alliance is open to all countries and organizations sharing a commitment to a common research agenda and willing to invest financial support and human and technical resources. From twelve members in 1971, today's membership of sixty-four includes a majority of developing countries. Membership is poised to grow further.

CGIAR members contributed \$450 million in 2005, the single-largest public goods investment in mobilizing science for the benefit of poor farming communities worldwide.



A Global CGIAR



Centers supported by the CGIAR

Africa Rice Center (WARDA)
www.warda.org

International Center for Tropical Agriculture (CIAT)
www.ciat.cgiar.org

Center for International Forestry Research (CIFOR)
www.cifor.cgiar.org

International Maize and Wheat Improvement Center (CIMMYT)
www.cimmyt.org

International Potato Center (CIP)
www.cipotato.org

International Center for Agricultural Research in the Dry Areas (ICARDA)
www.icarda.org

International Crops Research Institute for the Semi-Arid Tropics (ICRISAT)
www.icrisat.org

International Food Policy Research Institute (IFPRI)
www.ifpri.org

International Institute of Tropical Agriculture (IITA)
www.iita.org

International Livestock Research Institute (ILRI)
www.ilri.org

Bioversity International
www.bioversityinternational.org

International Rice Research Institute (IRRI)
www.irri.org

International Water Management Institute (IWMI)
www.iwmi.cgiar.org

World Agroforestry Centre (ICRAF)
www.worldagroforestry.org

WorldFish Center
www.worldfishcenter.org

Research is a collaborative enterprise

The CGIAR's achievements would not be possible without the support and commitment of the 64 members and many hundreds of partner organizations who together form the growing CGIAR alliance.

CGIAR Members

African Development Bank	Inter-American Development Bank	Portugal
Arab Fund for Economic and Social Development	International Development Research Centre	Rockefeller Foundation
Asian Development Bank	International Fund for Agricultural Development	Romania
Australia	Islamic Republic of Iran	Russian Federation
Austria	Ireland	South Africa
Bangladesh	Israel	Spain
Belgium	Italy	Sweden
Brazil	Japan	Switzerland
Canada	Kellogg Foundation	Syngenta Foundation for Sustainable Agriculture
China	Kenya	Syrian Arab Republic
Colombia	Republic of Korea	Thailand
Commission of the European Community	Luxembourg	Turkey
Côte d'Ivoire	Malaysia	Uganda
Denmark	Mexico	United Kingdom
Arab Republic of Egypt	Morocco	United Nations Development Programme
Finland	Netherlands	United Nations Environment Programme
Food and Agriculture Organization of the United Nations	New Zealand	United States of America
Ford Foundation	Nigeria	World Bank
France	Norway	
Germany	OPEC Fund for International Development	
Gulf Cooperation Council	Pakistan	
India	Peru	
Indonesia	Philippines	





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