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Approaches for Systematic Planning of Development Projects 〈Higher Education〉

March 2004

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Since FY2002, the Japan International Cooperation Agency (JICA) has referred to scheme types such as Project-Type Technical Cooperation, Individual Expert Team Dispatch, and Research Cooperation collectively as Technical Cooperation Projects. However, since there is a possibility of confusion with the original names of scheme types, this report also uses the current term Technical Cooperation Projects with reference to projects that were started prior to FY2001 for consistency.

Similarly, collaborative projects with other entities such as NGOs have been collectively referred to as JICA Partnership Programs since FY2002, and this report, therefore, uses the term Partnership Program with reference to projects that were started prior to FY2001 for consistency.

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Foreword

The Japan International Cooperation Agency (JICA) has been working toward the enhancement of its country-specific and issue-specific approaches by formulating JICA Country Programs, implementing Project Request Surveys, and drafting Thematic Guidelines. At present there are significant differences between countries in terms of progress levels or categorizations of development issues and cooperation programs. To improve further JICA Country Programs and deal with important development issues requires appropriate formulation of programs and projects based on a fundamental understanding of development issue and effective approaches toward them, while recognizing that situations and issues differ from country to country. JICA must clarify the priority areas for cooperation, based on both the actual conditions of each target country and a systematic approach for each development issue.

Therefore in FY2001 as a part of an effort to promote country-specific approaches by enhancing issue-specific approaches JICA conducted the study on "Approaches for Systematic Planning of Development Projects" in four issues: Basic Education, HIV/AIDS, Rural Development, and Promotion of Small and Medium Enterprises (SMEs). The study systematized these issues and specified the indicators to be used as references in planning, monitoring and evaluating JICA's activities. Furthermore, the study reviewed JICA's previous projects and summarized their trends, matters of concern and representative cases for each issue, based on Development Objectives Charts.

Due to a growing demand for systematization of other issues as well, a further study was carried out in FY2002. Four new development issues were taken up: Poverty Reduction, Trade and Investment Promotion, Higher Education, and Information and Communication Technology. The results of this study will be adopted in the JICA Thematic Guidelines and further developed by the Agency Thematic Network.

In conducting the study and preparing this report, a task force was set up, chaired by Mr. Hiroshi Kato, JICA Director of Planning and Coordination Division, Planning and Evaluation Department, and comprising JICA staff of related departments, JICA Senior Advisors, Associate Specialists, and external consultants. A considerable number of JICA staff members, as well as external experts, further contributed by offering valuable comments on the draft report. I would like to take this opportunity to acknowledge the efforts and contribution of all of these individuals.

Finally, it is my sincere hope that this report will prove a worthwhile step in the enhancement of issue-specific approaches.

September 2003

Morimasa Kanamaru
Managing Director
Institute for International Cooperation
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Terms and Abbreviations

Terms/Abbreviations	Remarks
Higher Education	
Accreditation System	A system to guarantee the quality of degree-granting higher education* institutions and programs. Ordinarily, a third party evaluation institution carries out this function by evaluating the quality of higher education institutions from the outside. The development of these systems has differed depending on the country. In the U.S., a third party nonprofit organization (called an accrediting institution or accreditor) established jointly by a number of member universities is operating using the membership dues and fees of the member schools, and undertakes regular evaluation of each university and its courses of study using various measures. Accreditation is a system that spurs constant effort at improving the quality of education at each university. However, in the U.S., it is also used as the standard for determining whether students at a school will be eligible for government scholarships or students loans and whether the university is qualified to receive other grants. On the other hand, in Europe, national level evaluation institutions were established in England, France and the Netherlands in the mid-1980s. Following that, national level evaluation institutions spread to other countries. In the Netherlands, a union of universities conducts third-party evaluation and the government posts an observer, who evaluates the union's entire independent evaluation in what is called meta-evaluation, an indirect system for managing evaluation. These different systems are influencing the higher education systems of countries which have similar systems. A strong influence of the U.S. accreditation system can be seen in East Asia, in Japan University Accreditation Association, and in South Korea, Taiwan and China. On the other hand, the approaches of England and France have had a steady influence in countries that were their former colonies. Items evaluated include the mission of the educational institution, the organizational structure of the institution, the institution's economic resources, the teaching plan for each course of study, the support for instructors, the support for students, students' academic results, research results, etc. However, with the recent rise of educational institutions of varied forms using a variety of media, it has been pointed out that new evaluation standards based on these institutions' unique characteristics need to be introduced.
Adult Education	Adult education and adult learning comprise the core of lifelong education and lifelong learning. In today's aging society where there is much social upheaval, learning during the long adult period of life is becoming more and more important. The basis of adult education and adult learning is in the autonomy of the learner; each adult has to successfully complete his/her own learning program. In order to make this happen, it is necessary to establish a lifelong learning system where people can learn throughout their lives. Depending on the conditions a country faces, there are various ways to developing adult education, such as emphasizing literacy education or other types of education.
Affirmative Action	Measures to actively address discrimination in employment and education for specific groups such as woman and ethnic minorities. In the education field, establishing special entrance standards or entrance quotas.
Brain Drain	The departure of adults working in the fields of education, research and development for other countries as a result of their demand for better research conditions and economic remuneration. Countries able to value research achievements and guarantee people the chance to demonstrate their capabilities are becoming recipient countries for the brain drain, and those countries that are not are losing their people. Even if many people in a country hold higher degrees, countries with few companies or research institutions lose people to brain drain, and this may become an obstacle to maintaining academic standards and socio-economic growth.
COE	Center of Excellence: An academic base for internationally competitive, cutting-edge research.
Digital Divide	Information gap. The gap that arises between those who are able to gain the benefit from access to information technology and those who are not.

Terms/Abbreviations	Remarks
Distance Education	A new form of education based on the ideal of equal opportunity in education and in which teachers and learners, while in separate locations, can make use of various media to engage in educational activities. In the midst of growing consciousness about lifelong learning, distance education is a system that can be used by adults, for whom it may be difficult to find a set, regular time to learn and by people who want to learn but live in regions where there may be no higher education opportunities. Also, in the traditional system where one commutes to a university to take courses, the capacity of the facilities and equipment present physical limitations. However, in distance education it is possible to dampen the effect of these volume limits significantly. Through varied media and learning methods, it is possible to set a learning place and time to fit the convenience of the learner. Also, through using a variety of mass media, one can lighten the tuition burden. There is also the benefit that, while maintaining the quality of the education, one can offer education at a standard level. Furthermore, even in cases where teachers and facilities are insufficient, distance education can be used as an effective educational method not only for a lifelong education system but can be applied to many different educational situations.
EFA	Education for All: Idea advocated at the World Conference on Education for All in Jomtien, Thailand in 1990. As a result of the Conference, promotion of "Education for All" gained international consensus.
Extension School	An effort to promote the liberation of higher education through broadly offering the functions of universities and specialty schools to society and individuals. Rather than the customary closed type of higher education which targets a specific group of people, extension schools aim to provide adult learners, including youth, with an open school with a wide array of university courses. At present, there are generally two types of extension schools being implemented. The first uses the physical resources of the university and makes elective courses for credit openly available once classes are over during the day or on Saturdays and Sundays, and is similar to a specialty school offering the opportunity to obtain certifications, but located within a university. The other type is based on the ideals of a "university open to society" or "an institution for additional education of high-level human resources," and is established through cooperation with business. This type of school provides a new higher education program in which universities, corporations and governments collaborate.
Further Education / Continuing Education	Further education and continuing education are education provided to adults following the completion of their school educations. In England, the term used is "further education," and this refers to post-secondary education provided to adults past school age that uses the adults' free time to offer cultural training and other activities. Education at degree-granting universities is not included in this definition. In the U.S., the term is "continuing education," and this refers to public courses at universities and open courses at public schools, community college courses for adult education, church-based study programs targeting adults, broadcast education for adults, etc.
IT (ICT)	Information Technology (Information and Communication Technology): Refers to the wide range of computer and networking technology.
Internal Efficiency	The relationship between inputs and outputs. In the area of education, it is often referred to in conjunction with students' repetition and graduation rates. In turn, the external efficiency of education refers to the relationship between education and employment.
Knowledge Society	From the middle part of the 20th century until recently, the economy was centered on mass production using established technology. However, one now sees a transformation to a knowledge-centered society where economic growth is driven by the creation of hard and soft knowledge. One calls this kind of society a "knowledge society."
Learning Society	A concept for a form of future society promoted by Robert M. Hutchins, which has led to the concept of lifelong learning* A society liberated from labor not only provides all adults with regular adult education but also the whole social system will create values that aim to achieve the purpose to promote humanity and that education is not for the development of manpower, but to increase the true value of life and to promote human growth.
Life-long Learning	A way of thinking in which adults, after they have finished their school education, or children in order to achieve self-realization within their communities, take various opportunities to continue learning throughout their lives. More than lifelong education, the term "lifelong learning" is used frequently nowadays because it expresses the autonomy and decision-making right of the learners. In June 1999, at the G-8 Summit in Cologne, Germany, a charter on lifelong learning was adopted and in it, its importance as a "passport to mobility" among classes and communities, and different jobs, was recognized once more.

Terms/Abbreviations	Remarks
Mass Education Society	This refers to a society where many people undergo education for a long period of time and where their educational history most often impacts their work life and life in the society. The special characteristics of a mass education society are a significant number of people moving up to higher levels of education, an atmosphere where people imagine education is open to everyone and can be used to build careers and contribute to personal social stablility, meritocracy, the rise of an academic elite, etc. M. Trow categorizes higher education's development stages using the indicator of the ratio of the higher education age population to those in school and finds an elite-type (up to 15%), mass education (15%-50%), and universal education (50%+). Through the rise of mass education, not only can one see a diversification of functions in society and a diversification of institutions, but diversification develops in such areas as education and research qualifications.
Non-formal Education	Refers to education outside of regular schools such as religious education, community education, adult education and literacy education.
Online Journal	On the Internet, makes available such things as academic journals and magazine content and adds an easily usable search function. Adoption of these has been very rapid in English-speaking countries, and the authoritative academic journals in the U.S. and Europe are almost all made available on the Internet.
Online University / Virtual University	Universities that offer courses and the curriculum for the course on the Internet as well as an online education system using the computer. Online education started as one component of already existing universities, but at present, one sees cases where several universities and colleges within a region concentrate on one location and provide a large number of courses (California Virtual University). Also, African Virtual University (AVU), a projected constructed to provide a high-quality education over a wider region crossing national borders, has been implemented. Various issues arise with distance education and cooperative learning among universities from different countries, including time differences, cross-cultural understanding, and the universities' management of this kind of project.
Open University	A higher education institution with the goal of providing higher education to community residents or broadly to adults. The origin of open university is the new university format established in England in 1971. Open universities employ mainly print educational materials but make use of a variety of learning methods, including use of broadcast media, and they offer a diverse array of courses. Another special characteristic is that one can enroll without taking an entrance exam. There are three types of open university programs: ones that grant degrees, programs that do not grant degrees but enable learners to choose courses based on their own educational needs and interests, and graduate school programs. In Japan, the University of the Air was established in 1981. It was created with the ideal of an open university, and its special characteristic was the central use of television and radio media more than printed educational materials. Open universities and graduate schools which rely on a correspondence format making use of multimedia have been newly established in countries throughout the world, and especially in Thailand, they hold a large share of the higher education opportunities being provided to the masses. In the midst of a degree-oriented society with a lifelong learning* system, this format of education opens up higher education broadly to the society. Together with opportunities to move up to university, open universities have become places that respond to the diverse learning demands of the citizenry, including the training of adults for their present jobs and complement traditional higher education with universities at the center.
Permission to Establish a University	One system for guaranteeing the quality of higher education.* In many countries, the national or state/provincial governments or other entities give permission for the establishment of higher education institutions. In Japan, there are necessary minimum standards for establishing a university called the "University Establishment Standards," and when a new university is established or a course of study is added, one must meet these standards. Japan's "University Establishment Standards" were set as a result of a directive of the Ministry of Education in 1956 and, following that, a Council for University Establishment set standards regulations related to public and private universities. In the U.S., permission to establish higher education institutions is granted based on the standards of each state created by that state government. Following that, an organization such as an accreditation association in each region examines whether the institution meets the standard to grant degrees, and the effectiveness of the degrees granted is guaranteed by the accreditation agencies and specialized accreditation agencies. Therefore, in the U.S., the permission granted by state governments is provisional; the degree is regarded as official only after the accreditation.
Polytechnic	Refers generally to 2-3-year technical training schools.
Post-secondary Education	Refers generally to education with a primarily vocational focus involving specialty courses at schools outside of universities, graduate schools, junior colleges and high level specialty schools.

Terms/Abbreviations	Remarks
Recurrent Education	An educational concept advanced in 1973 by the OECD's* CERI (Centre for Educational Research and Innovation), in which in order to enhance their careers, people alternate between labor and learning in different periods. In contrast to continuing education, recurrent education makes things like the specialized work experience accumulated during one's adult life a base and places emphasis on obtaining new knowledge based on things like technological innovation and higher level specialized and technical knowledge. To do this, there is an active emphasis on obtaining degrees, and a special characteristic is that universities and graduate schools are the main places for study in this form of education.
Relevance	Appropriateness, connectedness. In the education field, it refers to the connection between educational content and the needs and cultural characteristics of the community.
SEED-Net	Southeast Asia Engineering Education Network: A JICA* technical cooperation project* begun in April 2001 in Bangkok which aims to improve engineering higher education and enhance the development of human resources throughout the ASEAN countries.
Tertiary Education / Higher Education / Post-secondary Education	The definition of higher education differs depending on the country, but in many places higher education refers to education at the undergraduate level and above. On the other hand, post-secondary education refers to vocational education other than university or junior college education that takes place after the completion of secondary education. Tertiary education is a term that attempts to encompass the meanings of both higher education and of post-secondary education as a "third stage" of education. The term is used with comparative frequency in Europe, which has polytechnics, fachhochschule, and other types of higher education vocational institutions. In Japan, universities, graduate schools, junior colleges and higher level specialty schools are categorized as "higher education" while courses in non-higher-level specialty schools are categorized as post-secondary education. Recently, however, the specialty courses in non-higher-level specialty schools are starting to be categorized as a part of higher education.
UNITWIN	University Twinning: A UNESCO* program established in 1992 aimed at developing cooperative relationships among various schools, including universities, in developed and developing countries in order to build higher education networks across and within regions.
WCHE	World Conference on Higher Education: Led by UNESCO*, 2,500 education specialists from 162 countries gathered in Paris for this Conference in 1998. At the Conference, the World Declaration on Higher Education was adopted. Within the Declaration, 17 directions for higher education reform and 3 priority areas of action were delineated.
Development Assistance	
BHN	Basic Human Needs: The basic needs of human beings. The concept of providing assistance to people in the lower income classes that is directly useful to them. Food, shelter, clothing, etc.—the minimal things that are necessary to live life such as safe drinking water, sanitation facilities, health, education, etc.
Capacity Building	To pursue institution building, improvement of the capacity to implement and manage. It refers to building up the independent capacity of the implementing entity.
DAC New Development Strategy	In 1996, the DAC High Level Meeting* adopted a long-term development strategy looking towards the 21st Century, commonly called "Shaping the 21st Century: The Contribution of Development Cooperation." The three priority points of the strategy were: 1) the importance of ownership and partnership; 2) pursuit of comprehensive and individual approaches; and 3) setting of concrete development objectives (e.g. cutting the population in poverty by half by 2015). The strategy led to increases in the percentage of expenditures for social infrastructure, rationalized the implementation structure in countries receiving the assistance, and called for the promotion of decentralization.
Local Cost	The cost of implementing and managing a project that should be borne by the recipient country.
MDGs	Millennium Development Goals: An extension of the New Development Strategy* agreed upon at the United Nations General Assembly in September 2000, and which established more full and specific goals. Goals to achieve by 2015 were: 1) eradication of extreme poverty and hunger; 2) universal primary education; 3) gender equality and women's empowerment; 4) reduction in the children's mortality rate; 5) improvement of maternal health; 6) prevention of the spread of diseases such as HIV/AIDS and malaria; 7) creation of a sustainability environment; and 8) building of a partnership for global development.
Medium-term Policy on Official Development Assistance	Commonly called the ODA Medium-Term Policy. A systematic and concrete summary of Japan's plans for ODA in the five years starting in 1999, aiming at an effective and efficient implementation.
NGO	Non-governmental Organization: Non-governmental organizations, private nonprofit organizations.

Terms/Abbreviations	Remarks
ODA	Official Development Assistance
ODA Charter	Official Development Assistance Charter: Following the end of the Cold War, the view that Japan's aid should be used as one key part of its strategy for relations with other countries gained strength, and in 1992, four basic philosophies and four principles concerning ODA were expressed and approved as a Cabinet decision.
PRSP	Poverty Reduction Strategy Paper: Paper concerning poverty eradication. This was the agreed-upon strategy paper when a poverty reduction strategy to address the debt crisis problems of HIPCs Heavily Indebted Poor Countries), was presented in 1999 at the general meeting of the World Bank and IMF.* This strategy has as a goal using money from debt relief measures appropriately for development and poverty eradication.
Sector Program (SP)	Based on ownership by developing countries themselves, a sector- or sub-sector-scale program which donors and other development experts participate in negotiating and establishing.
Two-step Loan	One method of granting loans in which a financial agency of the developing country directly receives a loan or receives it through the government and then loans it again to small or medium range companies in the country or to the agricultural sector.
Untied loan	A loan where procurement of materials and services is not required to be from the donor country.
Organizations / Institutions	
ADB	Asian Development Bank
ASEAN	Association of Southeast Asian Nations
CIDA	Canadian International Development Agency
DAC	Development Assistance Committee: Coordinates the assistance policy of the OECD* to developing countries. One of three major committees of the OECD, along with the Trade Committee and the Economic Policy Committee. As of 2003 membership is 23 countries.
DAC High Level Meeting	A meeting held once a year in which high-level assistance officials from each DAC country attend to discuss and adopt recommendations on particularly important development issues. In the 1996 DAC High Level Meeting of the OECD*, the meeting adopted the goal of halving the 1990 ratio of people living in extreme poverty by 2015.
DFID	Department for International Development (UK)
IDB	Inter-American Development Bank
IMF	International Monetary Fund: Established in 1944. An organization that has supported post-war international finance along with the World Bank. While the World Bank has provided funding for reconstruction and development, the IMF has served to provide funds necessary for the fixed exchange rate system and for stabilizing currencies.
JBIC	Japan Bank for International Cooperation: Established in 1999 through the integration of the Export-Import Bank of Japan and the Overseas Economic Cooperation Fund.
JETRO	Japan External Trade Organization
JICA	Japan International Cooperation Agency
OECD	Organisation for Economic Co-operation and Development: Established in 1961 as a reorganized version of the Organisation for European Economic Co-operation (OEEC, established in 1948) to rebuild the European economy. Goals are economic growth, assistance to developing countries, and the expansion of multidirectional free trade. 30 member countries at present.
UNESCO	United Nations Educational Scientific and Cultural Organization
UNU	United Nations University: UNU was established by the General Assembly of United Nations in 1973 and started activities in September 1975 at its headquarters in Tokyo. The University is an international community of scholars and researchers and operates through a worldwide network of universities and research institutes.
USAID	The United States Agency for International Development
World Bank	Generally refers to the two organizations, the International Bank for Reconstruction and Development (IBRD) and the International Development Association (IDA). The World Bank Group includes the above two organizations and the International Finance Corporation (IFC), the Multilateral Investment Guarantee Agency (MIGA), and the International Center for Settlement of Investment Disputes (ICSID).
WTO	World Trade Organization: A core organization of international trade established in January 1995 with a membership of 142 countries and regions (as of July 2001).

Terms/Abbreviations	Remarks
JICA Terminology	
Community Empowerment Program	Started in FY1997. Support related to maternal and child health, welfare of the elderly, the disabled and children, and poverty alleviation measures are commissioned by JICA for local NGOs. Carried out as a part of Technical Cooperation Projects* from FY2002.
Development Studies	Small-scale studies that involve the formulation of simple basic development plans and the analysis of various types of basic data related to those plans, as well as surveys to make up for deficiencies in official statistics. Performed under the initiative and direction of overseas offices.
Grant Assistance for Grassroots Projects	A form of grant aid cooperation executed through Japan's overseas diplomatic offices to support small-scale projects that are not suitable to be undertaken through usual Grant Aid cooperation. Implemented in response to requests from local governments and non-governmental organizations (NGOs) in developing countries.
Grassroots Partnership Program	JICA's entrusting of cooperation on NGOs, local governments, and universities to provide more tailored and swift assistance. The maximum implementation period is for one year with less than 10 million yen. Carried out as a part of JICA Partnership Programs* from FY2000.
JOCV	Japan Overseas Cooperation Volunteers: A volunteer system established in 1965 for participants between 20 and 39 years of age. Approximately 23,000 volunteers have been dispatched to 76 developing countries.
Local In-country Training (Second Country Training)	Training conducted in developing countries so that Japan's technical cooperation outcomes can be better disseminated throughout the developing country.
Master Plan Study	A study to draw up a comprehensive development plan on an overall country or a specific region, or a long-term development plan for a specific sector.
Partnership Program	Projects carried out by JICA as part of ODA to support cooperation activities targeting regional communities in developing countries through Japanese NGOs, universities, local governments, and non-profit foundations that intend to carry out international cooperation. Particular emphasis is given to the three areas 1) Technical Cooperation through personnel, 2) target projects or regions with a high urgency, such as in the case of reconstruction assistance, and 3) opportunities to promote the understanding of and participation of Japanese citizens in international cooperation.
Project-type Technical Cooperation	A form of technical cooperation that is planned, implemented, and evaluated within a 3-5 year cooperation period. The scheme combines the dispatch of experts, acceptance of trainees, and provision of equipment. Starting in FY2002 several types of assistance are grouped together under the name Technical Cooperation Projects*.
Technical Cooperation Project	A cooperation project with certain objectives that need to be achieved in a specific time frame with a logical relationship between the output/outcome and input/activities, in which cooperation can be made up of a combination of dispatch of experts, acceptance of trainees, and provision of equipment to meet the objectives.
Third-country Training	Training in a comparatively advanced developing country in which the training utilizes that country's personnel who have received training through Japan's technical cooperation and invites trainees from other developing countries.

Terms with * are listed in this chart.

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Contents

Outline of Study

1. Background and Purpose of the Study

This study is the second phase of the study on Approaches for Systematic Planning of Development Projects carried out in FY2001. The study was designed to enhance country-specific approaches by strengthening issue-specific approaches. In the first phase of the study, four major development issues (Basic Education, HIV/AIDS, Promotion of Small and Medium Enterprises (SMEs), and Rural Development) were systematized and effective approaches for them were identified. Furthermore, the study reviewed JICA's activities based on Development Objectives Charts and the results were summarized as a report "Approaches for Systematic Planning of Development Projects."

As there was a growing demand for similar systematization of other issues as well, JICA decided to conduct a new study in FY2002. As a result of coordination within JICA's relevant divisions, this FY2002 study targeted the four issues: Poverty Reduction, Trade and Investment Promotion, Higher Education, and Information and Communication Technology.

The results of this study are envisioned to be constructive in the following ways:

- As basic information when formulating and revising Development Objectives Matrices for JICA Country Programs
- As basic information for project formulation studies and project and program formulation.
- As basic information when evaluating programs or carrying out country-specific evaluations.
- As materials for the JICA staff and Experts to use when they explain JICA's views on issues to recipient countries and other donors during meetings.
- To be stored in an Agency Thematic Database and shared within JICA with respect to views and approaches to issues.

2. Organization of this Report[1]

Chapter 1	Overview of the Issue (Current State, Definition, International Trends, Trends in Japanese Assistance)
Chapter 2	Effective Approaches for the Issue (Goals, Effective Approaches) *This chapter explains the systematized approaches and reviews JICA's activities on the basis of Development Objectives Chart.
Chapter 3	JICA's Cooperation Policy (JICA's Priority Areas, Points of Concern, and Future Direction)
Appendix 1	Major Activity Cases
Appendix 2	Basic Check List (including key indicators)
References	

[1] As the results of the study are intended to be utilized in JICA's Thematic Guidelines, the organization of this report was designed to be consistent with the standard organization of future Thematic Guidelines.

3. Structure of the Development Objectives Chart

In this study, a Development Objectives Chart similar to the following was created for each development issue.

Sample Development Objectives Chart (Information and Communication Technology)

Sample Development Objectives Chart (Information and Communication Technology)

Development Objectives	Mid-term Objectives	Sub-targets of Mid-term Objectives	Examples of Activities
1. Improvement of Ability to Formulate IT Policies	1-1 Establishment of Telecommunications Policy	Introduction of Competitive Market Principle	× Support formulation of foreign capital investment policy × Support policy to promote private investment × Support deregulation of market entry ○ Support formation of competitive markets
① Formulation of national IT strategy Key Indicators	① Number of service subscribers ② Scale of telecommunications industry ③ Advancement of liberalization	① Number of new market entries ② Scale of telecommunications industry ③ Price of communications	

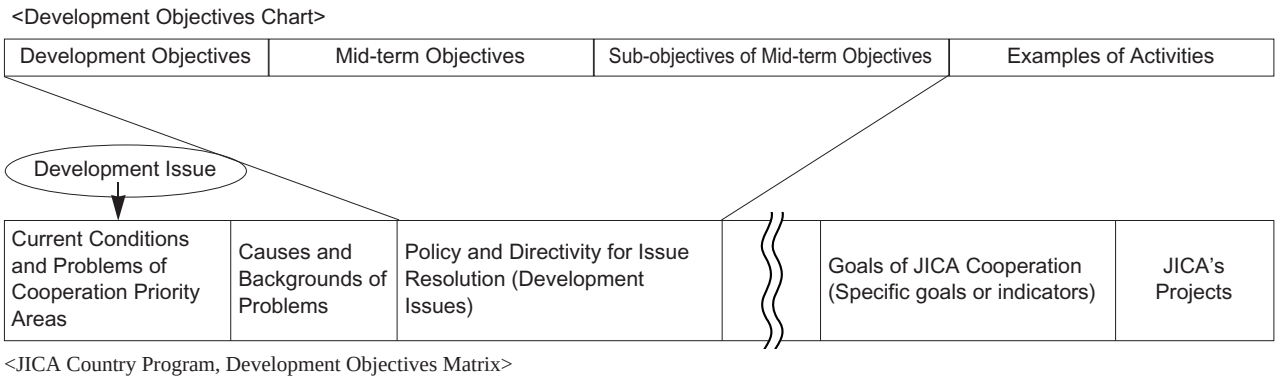
＊Circled Numbers imply key indicators
＊Marks in the column of Examples of Activities indicate how often JICA has implemented relevant projects.
◎: JICA has considerable experience, ○: JICA has certain experience,
△: JICA has experience as a component of projects, and ×: JICA has little experience.

"Development Objectives," "Mid-term Objectives," and "Sub-targets of Mid-term Objectives" in the above sample chart show the break-down of each development issue.

Development Objectives Chart includes a summary of "Development Objectives" and "Mid-term Objectives" for the purpose of showing the overall picture of an issue as well as the chart for each Development Objective including its "Examples of Activities" and JICA's relevant cases. A complete chart covering all items ranging from "Development Objectives" to "Examples of Activities" is annexed in the end of the report.

Generally, the relationship between the Development Objectives Chart and JICA Country Programs varies depending on the specific conditions of each country and sector. However, if "Development Issue" of this report corresponds to a "Priority Sector" of Development Objectives Matrix in JICA Country Program, "Development Objectives", "Mid-term Objectives," and "Sub-targets of Mid-term Objectives" in the Development Objectives Chart show the breakdown of "Policy and Directivity for Issue Resolution (Development Issues)" in the latter. (The goal level corresponding to the Development Issue differs depending on country or field.)

Relationship between the Development Objectives Chart and the Development Objectives Matrix of JICA Country Program



4. Task Force

The task force of this study is listed below. The task force was composed of four groups, and each group was responsible for drafting the respective article. The final study report was completed as a result of revisions of the draft articles based on the discussions at the Study Group meetings and a number of comments received from JICA staff of overseas offices and headquarters as well as external experts.

Members of Study Group

Chief	Director, Planning and Coordination Division, Planning and Evaluation Department	Hiroshi Kato
Poverty Reduction	Director, First Technical Cooperation Division, Social Development Cooperation Department	Eiji Inui
	Deputy Director, Global Issues Division, Planning and Evaluation Department	Harumi Okawa
	Associate Specialist, Global Issues Division, Planning and Evaluation Department	Toshinori Hamaguchi (until March 2003)
	Planning Division, Regional Department I (Southeast Asia and Indo-China)	Yasuhiro Kawazoe (also Trade and Investment Promotion)
	Associate Specialist, Second Technical Cooperation Division, Social Development Cooperation Department	Yuko Ishibashi
	Deputy Director, Project Monitoring and Coordination Division, Grant Aid Management Department	Masahiro Tawa (from January 2003)
	Second Research and Development Division, Institute for International Cooperation	Kanako Adachi (also a member of the secretariat)
	Permanent Mission of Japan to the United Nations	Yuko Ishizawa (until December 2002)
	Researcher, Global Link Management, Inc.	Harumi Iida (from December 2002 until February 2003)
	Support Unit, Poverty Reduction, Agency Thematic Network	Mitsuko Oishi (until March 2003)
Higher Education	Director, Programme Division, JICA Yokohama International Centre	Nobuko Kayashima
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Overview of Effective Approaches for Higher Education: Executive Summary

1. Overview of Higher Education

1-1 Definition

Higher education comprises all post-secondary education, training and research guidance at education institutions such as universities that are approved by the state authorities as higher education institutions. It includes not only those that take place within regular universities and graduate schools, but shorter term education and training courses (polytechnics, junior colleges, and various forms of technical specialty schools) that are 2-3 years in length, and even correspondence courses that make use of information technology and are targeted at a broad population of students.

Higher education institutions - most prominently universities - have three purposes: education, research and contributing to society.

1-2 Current Situation

The recent rise of a knowledge-based society; social, economic and information globalization; increased demand for higher education; and changes in the social and potential environment of developing countries are all deeply connected to each other and are having a significant influence on higher education. Higher education is charged not only with developing government and private sector leaders, but also bears the burdens of developing broadly knowledgeable human resources and raising society's overall intellectual level. Higher education and society are also in a dynamic relationship, leading to demands for higher education to meet society's expectations.

Recently, the number of students enrolled in higher education has increased in developing countries. However, there are mounting problems including disparities among regions and by gender and race/ethnicity, lack of financial resources, and decline in quality of education and research. Higher education that responds to the diverse needs of an increasingly complicated society and economy is needed.

1-3 International Trends

From the 1960s to the 1980s, based on an understanding that the effective development of human resources would drive economic growth, overall investment in education grew. In higher education, technical education and training that could be directly linked to economic growth was emphasized.

Upon entering the 1980s, amidst the problem of accumulating debt, structural adjustments were instituted in developing countries, and the government cut education budgets markedly. In particular, cuts were made in monies devoted to higher education, where expenditure per student (unit cost) was high. In addition, basic education as a fundamental human right was once again recognized, and in 1990 the World Conference on Education for All was held, leading to primary education becoming the main current of international cooperation efforts in the education field.

However, upon entering the 1990s, rapid globalization of society and the information revolution brought about social changes resulting in a relatively significant increase in the role of knowledge in economic and social development as well as a growing trend towards re-recognizing the role of higher education.

In 1998, UNESCO took the lead in organizing the World Conference on Higher Education, where the World Declaration on Higher Education was adopted. The Declaration presented 17 articles delineating future directions for higher education reform as well as priority actions for change and development of higher education at three levels (national level, institutions level and international level). Following this conference, one could see a new movement to support higher education in such actions as the World Bank's 2000 review of aid to higher education.

1-4 Trends in Japanese Assistance

Japan's aid to higher education, includes grant aid from the Ministry of Foreign Affairs, loan cooperation from the Japanese Bank of International Cooperation (JBIC), and scholarship program for foreign students and research assistance from the Ministry of Education in addition to the technical cooperation implemented by JICA.

Customarily, Japan's development assistance had emphasized human resource development in the higher education and technical education areas, as this was expected to contribute directly to economic activities and technological development. As a result, up until the 1980s, the mainstay of Japan's aid cooperation was establishment and expansion of university departments and courses in technical and scientific fields. However, in the latter part of the 1980s, assistance for improving the research capacity of graduate schools and research centers over a broader range of fields was implemented. Recently, the target of assistance has widened to include the areas of university management and higher education administration as well as providing scholarships.

JICA's cooperation in the higher education area amounted to 19% of its overall education assistance in 2001, constituting a large volume. In addition to more customary assistance to strengthen scientific specialties, recent trends show an increase in aid for higher education administration and the social sciences. The target regions for the aid are predominantly in Asia but, recently, dispatch of Japan Overseas Cooperation Volunteers (JOCVs) and JICA experts to the Africa region has been gradually increasing.

2. Effective Approaches for Higher Education

2-1 Four Development Objectives for Higher Education

Recent efforts to address issues in higher education in developing countries take into account the changes in environment surrounding higher education and the roles demanded of it. Efforts have aimed at diversifying higher education institutions, promoting lifelong learning, expanding opportunities and pursuing equity, distance/regional education, evaluating institutions and raising quality, networking among institutions, building relationships with industry, promoting private education, diversifying financial resources, and governance. Based upon these efforts, this report has identified the following four development objectives: Improvement of Educational Activities, Strengthening of Research Function, Promotion of Contributions to Society, and Improvement of Management.

2-2 Effective Approaches for Higher Education

Development Objective 1: Improvement of Educational Activities

Higher education institutions must not only use educational activities to produce the human resources necessary for socio-economic activities but also to provide opportunities in higher education that match individual needs and abilities. Therefore, improvement of educational activities must take into account both societal and individual needs.

Directions for improvement of educational activities include, first, diversifying higher education institutions in order to guarantee wider access and respond to the diversification of higher education needs. Second, quality of higher education must be improved. Third, to promote equity in higher education by expanding education opportunities for women and other vulnerable groups in the society must be planned.

To diversify higher education institutions, diversifying courses of study, employing distance education that makes use of information technology, promotion of private education, and establishment of regional universities can be considered. To improve the quality of higher education, one must improve the quality of teachers, students, curriculum, educational materials, as well as facilities and equipment. To promote equity, instituting a preferential admissions policy for women and other vulnerable groups, diversifying higher education institutions to include

ones that meet the needs of these persons, assisting in the securing employment after graduation, and activities to convince society of the merit of the education of these persons are necessary. Rectifying inequities at the primary and secondary levels is also essential for promoting higher education enrollment among women and other vulnerable groups.

Development Objective 2: Strengthening of Research Function

Research activities contribute directly to improving the quality of higher education personnel, are indispensable in their connection to the improvement of education activities, and dissemination of the results of research activities contributes to society. However, in developing countries there are many higher education institutions that are not adequately involved in research.

In order to strengthen the research function, it is necessary to approach the issue both by developing and strengthening the human resources who will perform the research and by establishing an appropriate environment for research activities. In developing human resources, it is essential to develop researchers in a deliberate way through encouraging mutual exchanges internationally and among institutions and other means. To establish an appropriate environment for research, securing facilities and equipment that match the level of the institution as well as providing access to online journals and research networks are important. In addition, to vitalize research activities, one can consider providing opportunities for presentation of research results and promoting joint research activities.

Development Objective 3: Promotion of Contributions to Society

Contributing to society by circulating built-up intellectual capital directly to society is one important function of higher education. However, as the role of higher education has come to be reevaluated recently, more and more demands are being made for higher education to contribute to community development and to industry.

Ways for higher education institutions to assist with community development include making educational curriculum and/or research activities focus on community development issues in the local community, having higher education institutions themselves implement community development activities, and providing technical guidance and information to community development institutions.

To develop relationships with industry, higher education institutions can not only supply human resources with technical expertise and other knowledge, but collaborate directly by conducting joint research or exchanging teachers and technologists.

Development Objective 4: Improvement of Management

In order to plan for the overall improvement of education and research, sustain these improvements, and to respond to the diverse needs accompanying changes in society, one must place into view the entirety of the higher education sector and improve the management of a whole institution.

In order to improve management, first one must establish a policy framework that matches trends and needs both outside and within the country. Setting up a consistent legal, political and financial framework is necessary. Strengthening management capacity of government administrators and of individual higher education institutions is necessary. Improvement on the financial aspect is particularly important. Diversification of financial resources and improvement of financial management is required. Also, it is necessary to improve the management of scholarship programs. Furthermore, in order to prevent decreasing quality from accompanying an expansion in volume in higher education, an evaluation system that is appropriate for a given country's own situation and the establishment of an accreditation system are important issues.

3. JICA's Cooperation Policy

3-1 JICA's Priorities

3-1-1 Principles

Up until now, much of JICA's higher education cooperation aimed at addressing the scarcity of technologists in particular fields or specific technological issues, rather than being a systemic approach to higher education as a whole. In order to attempt a new prioritization for higher education cooperation at JICA, first we need to discuss our understanding of higher education as a whole systematically. Then, based on that, we need to compile project experiences and clarify any JICA advantages. In deference to this process, we will not present development objectives based on the Development Objectives Chart at this stage; we will stop at principles regarding the conduct of higher education cooperation.

3-1-2 Cooperation for Basic Education and Higher Education

When implementing higher education cooperation, it is important to base the cooperation on the position of higher education within the educational field in that country, especially taking into account the relative prioritization of basic education and higher education.

In countries where basic education is still underdeveloped, one should place the first priority for development on basic education. The spread of basic education is not only necessary to the solution of development issues as a whole, but from both a volume and quality perspective, basic education composes the floor of the educational pyramid. On the other hand, if one considers that institutions of higher education are the source of intellectual capital in the society and places to train teachers, even in the case of less developed countries and small countries, some type of higher education function is necessary. Higher education is also necessary to develop teachers and for education and research. Therefore, it is necessary to engage in cooperation in the higher education field that touches upon the significance of higher education in a country and promotes balance in the overall educational sector.

3-1-3 Higher Education Cooperation Appropriate to Conditions of the Target Country

The roles demanded of higher education depend on each country's socio-economic conditions and range from developing the human resources needed for development, guaranteeing educational opportunities for self-realization, serving as a base of intellectual capital for the development of a knowledge-based society, contributing to society using accumulated intellectual capital, etc. For this reason, higher education policies and development strategies are not uniform. At the same time, recently, the same knowledge is demanded both in developing and more advanced countries in this internationally competitive society, and it is important to ensure education and research of high quality whatever the location.

Therefore, in higher education cooperation for developing countries, one must be conscious of the internationality of higher education while at the same time considering the situation of higher education in the given country, the development level of its educational sector as a whole, as well as the country's needs for development of human resources, and the country's own higher education development strategy. Then one can choose the most important areas for cooperation from the Development Objectives Chart. Points to pay attention to in the process include the following three:

1) Diversification of Higher Education

At present, the diversification of society has generated strong demand for higher education roles other than the development of technologists; these roles include things like guaranteeing availability of higher education for the masses and for vulnerable groups in the society, dealing with the information society, etc.

2) Structural Reforms in Higher Education

One should address not just the development of individual higher education institutions, but the reform of the higher education system as a whole. In addition, one should approach assistance for individual higher education institutions based on a grasp of the legal, institutional and financial frameworks of the overall higher education sector.

3) Diversification of Target Educational Institutions

Institutions targeted for cooperation should include not only those at the apex of the country's educational pyramid, but should be spread to those regional institutions and junior colleges that carry the burden of bringing education to the masses.

3-1-4 From Assistance for Specialty Education to Assistance for Higher Education Management

To expand higher education in developing countries, in addition to technical guidance in specialized fields, guidance on management of the higher education institutions themselves is necessary (securing and execution of a budget, provision and management of incentives to instructors, equipping the environment for education and research, strengthening ties with industry and the local community).

Therefore, JICA's future higher education cooperation should not only aim for technology transfer in specialized fields, but rather should bring into view the overall management of education and research at the target institutions and actively work towards its improvement. In order to do this, JICA must incorporate this management aspect from the early planning stages of projects and include management experts among the experts dispatched to assist with projects. JICA itself also needs to accumulate knowledge about the management of higher education institutions.

3-2 Points of Concern in Higher Education Cooperation

3-2-1 Higher Education Development and Political Interference

In higher education, political power has much impact. Therefore, in providing assistance in this sector, it is necessary to obtain a strong and consistent commitment from the government. In addition, it is necessary to engage in continuous exchange of opinions and compromise of opinions with stakeholders.

3-2-2 Globalization and Higher Education

Higher education is asked to contribute to increasing a country's international competitiveness. At the same time, higher education receives various influences from the rapid globalization. Examples of this are the acceleration of the brain drain, the diversification of higher education as a result of the development of information and communication technology, and the internationalization of higher education institutions. These issues are not ones that can be settled within a single country, but must be dealt with under international collaboration.

3-2-3 Privatization of Higher Education

In developing countries where higher education is being provided to the masses, private higher education institutions are rapidly expanding as another new receptacle for increasing higher education demand. Thus far, targets for JICA assistance have mainly been public higher education institutions. However, based on cooperation aims such as provision of higher education to the masses and responsiveness of higher education to socio-economic needs, one must also consider private schools as potential counterpart institutions. Nonetheless, one must keep in mind that with the privatization of higher education, issues of educational quality and fairness in

distribution of educational opportunities arise. One hopes for planning of assistance that includes both things like the creation of a system of quality assurance and a policy to promote equity through such things as scholarships that aim to secure fairness of opportunity.

3-2-4 Introduction of Competition into Higher Education

Recently, the idea that one should aim to improve educational quality through bringing the principle of competition into higher education has become the prevailing way of thinking. This would involve apportionment of budgets based on the results of competition among higher education institutions, among instructors and researchers, and among students. In future assistance, JICA must create incentives and raise quality through introducing competitive principles within and among educational institutions.

3-2-5 Securing of Sustainability

In higher education cooperation, the most important issue is securing the promise of sustainability once the assistance is completed. From an early stage, discussion of a plan for securing independent funding for budget items must take place, and this plan must be incorporated into project activities. Things like a national study abroad scholarship program that make use of outside funding and outside systems, as well as links with industry, are indispensable for promoting this kind of independent development momentum. If through contracted work with Japanese universities, higher education institutions in developing countries and Japanese higher education institutions can build an ongoing cooperative relationship, one can also consider this a contribution to the sustainable development of the higher education institutions. Therefore, this kind of contract work should be considered by JICA for the future.

3-2-6 Lack of Domestic Resources for Higher Education Cooperation

Japan lacks human resources for supporting aid to higher education in developing countries. The number of experts in Japan who have knowledge and experience concerning higher education administration and university management in developing countries is extremely limited.

Therefore, to develop new higher education projects, JICA must compensate for the lack of domestic resources by developing Japanese human resources for higher education assistance through appropriate training and study, actively use experts in developing countries or other third countries, and make use of new forms of assistance such as open requests for proposals and subcontracting arrangements.

3-2-7 Mutually Beneficial Measures of Cooperation for Higher Education Institutions Both in Japan and Developing Countries

Japanese higher education institutions have given advice and provided their professors as human resources for higher education cooperation in developing countries. However, in the future we can imagine that there will be a wider array of forms of collaboration such as Japanese higher education institutions themselves taking charge of implementing projects. Through cooperation with developing countries, Japanese higher education institutions can gain information and exchange personnel with fellow higher education institutions within a network and thereby improve their own quality. It is best if such mutually beneficial ways for Japan and higher education institutions in developing countries to cooperate can be found. Nonetheless, issues such as evaluation and management are also currently problematic for Japanese higher education institutions. As Japanese higher education institutions do not have comparative advantage in all areas, JICA must grasp the comparative advantages of Japanese higher education institutions in planning international cooperation for higher education.

Chapter 1 Overview of Higher Education

Higher education is education, training and research guidance that takes place after at the post-secondary level.

1-1 Definition

Higher education comprises all post-secondary education, training and research guidance at education institutions such as universities that are authorized as institutions of higher education by state authorities.[1] It includes all the activities a given country deems to be higher education - not only those that take place within ordinary universities and graduate schools, but shorter term education and training courses (polytechnics, junior colleges, and various forms of technical specialty schools) that are 2-3 years in length, and even correspondence courses that make use of information technology and are targeted at a broad population of students.

Higher education institutions - most prominently universities - have three functions in total. In addition to education, these are research and contributing to society.[2] The research and education functions are two sides of a coin; research makes a higher level of education possible and education, in turn, develops the human resources to do research. Recently, contributions to society have increasingly been demanded of higher education institutions. This means the higher education institutions need to have activities to ensure that accumulated knowledge is circulated directly back to society and that they do not become "ivory towers."

All three functions are intimately connected and none can be separated out when considering higher education. Thus, in this report, we will address not only the educational activities at higher education institutions, but the research and contributions to society of these institutions.

Representative examples of JICA's cooperation in the area of higher education are establishment or expansion of agriculture and engineering faculties/departments or graduate schools (for example, Kenya's Jomo Kenyatta University of Agriculture and Technology, King Monkut's Institute of Technology in Thailand, etc.) Also included in JICA's higher education

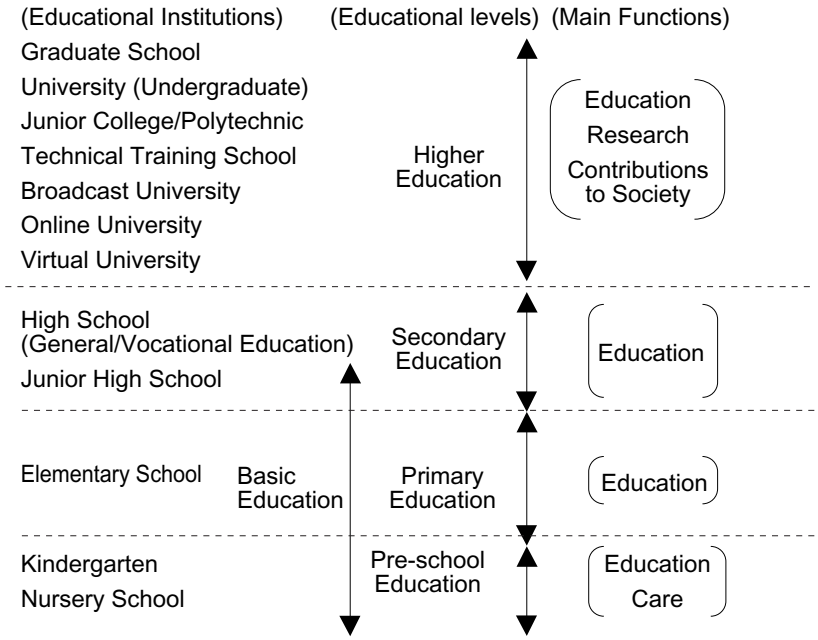
[1] In the World Declaration on Higher Education adopted by the World Conference on Higher Education in 1998, higher education was defined as: "all types of studies, training or training for research at the post-secondary level, provided by universities or other educational establishments that are approved as institutions of higher education by the competent state authorities." UNESCO, the World Bank, UNDP and others use this same basic definition.

[2] However, the importance placed on each of these functions varies greatly depending on the type of higher education institution. For example, large universities may have departments, graduate schools and affiliated research facilities, and there are therefore many that pursue education, research and contributions to society. However, there are many polytechnics, teacher training schools, specialized technical schools and other institutions that clearly have educational activities as their main function.

cooperation is aid to medical and nursing departments for development of specialists. Although JICA statistics place some of these examples and others in technical categories such as “Agriculture, Forestry and Fisheries” and “Public Health and Medicine” rather than education per se, in many cases during the implementation of these projects structural problems in higher education have proven to be obstacles. For this reason, we felt it necessary to examine these projects from a higher education perspective. Thus, we will also treat these cases as higher education examples. The higher education examples taken up in this report are the following concrete types of cases:[3]

- Projects for the establishment, expansion or reform of faculties/departments of agriculture, engineering or medicine
- Projects for the establishment, expansion or reform of graduate schools of agriculture, engineering or medicine
- Projects for the establishment, expansion or reform of short-term education institutions (less than 4 years) such as polytechnics and colleges
- Projects aimed at increasing research capacity closely related to education at departments/faculties, graduate schools and university-affiliated research institutions

Chart 1-1 Position of Higher Education within Educational Cooperation Areas (Excluding Non-formal Education)



[3] Much of the teacher training is at the higher education level, but JICA’s education sector statistics categorize it as cooperation for the basic education. Therefore, for convenience, we will omit if from this report. Concerning teacher training, JICA/IFIC (2002) has detailed information and can be used as a reference.

1-2 Current Situation

1-2-1 Environment Surrounding Higher Education

Even as higher education has been based on a Western "university model," it has developed in a way that is deeply rooted in the societies of which it is a part. However, the environment surrounding higher education is changing rapidly. The recent rise of a knowledge-based society; social, economic and information globalization; increased demand for higher education; and changes in the political and social environment of developing countries are all deeply connected and are having a significant influence on higher education.

The rise of a knowledge society in which the creation of new knowledge and its application are the key to economic growth

(1) Transition from an Industrial Society to a Knowledge Society

In the latter half of the 20th century we have seen **a change from economic growth led by mass production industry based on the established technology to knowledge-based growth in which hard and soft innovation ("creation of knowledge") has a higher economic value.** In the past, material and human capital like abundant natural resources and cheap and abundant labor were the source of economic growth. However, the application of science and technology and the production and use of "knowledge" of the quality of information and management have now become the keys to economic growth. At present, there is a strong demand for the ability to create and apply this "knowledge" which is essential to economic growth.

In order to participate in this kind of knowledge-based economy, social infrastructure that will contribute to this is necessary. At the national level, access to information must be secured, and promotion of information disclosure and legal protection and management of information like patents and copyrights are needed. Also, higher education institutions must maintain their status as places for the creation of knowledge and have an intimate connection with society to ensure that the new technologies developed can be applied in economic activities.

Globalization of people, goods, money and information

(2) Globalization of Society, Economy and Information

Because of the striking development of information technology in recent years, **the movement of people, goods, money and information has become much easier and the globalization of the world economy has accelerated.** Already the information society has caused borders to cease to exist, and if one has access to an information network it is possible to get information from it and share newly created things with many people. In this way, the information revolution has provided rapid access to knowledge and spurred the creation of new knowledge. This also contributes to the production of new wealth and services. The development of information technology has diversified the forms of higher education, and on the one hand is connected to improved quality and

expansion to a wider target of students. However, the information technology gap within and among countries is causing a new gap in higher education.

At the same time with globalization of information, economic globalization is also proceeding at a rapid pace. Multinational corporations are on one hand in a dominant position. On the other, the economies of developing countries are easily affected by trends in the globalized economy. Because of the declining costs of moving and the rise of the information society, globalization of the labor market is also progressing. While this contributes to human resources exchanges necessary for the development of higher education, it is also connected to the deepening brain drain of the knowledge workers, who are the main source of the creation of knowledge, to a relatively small number of industrialized countries.

Rising demand for higher education:
- The necessary of mastering new knowledge and technology
- The rise of a society based on educational credentials

(3) Rising Demand for Higher Education

Following World War II, higher education expanded throughout the world remarkably, though there have been different degrees. If one looks at increases in enrollment rates, one sees that the increase for higher education was greater than that for primary and secondary education. From 12 million students in 1960, the number of higher education students rose to 88 million in 1997, an approximate seven-fold increase.[4] Universities in developing countries had been small in scale and extremely intended to train elite persons, but from the time colonies became independent, higher education underwent rapid expansion.

One of the reasons for this rapid expansion was that **the demand for human resources who had underdone higher level education or training grew** with the increasingly complicated society and economy and the earlier-mentioned changes in the social environment. Furthermore, over the past 50 years, developing countries which had put their energy into expanding basic education produced a result whereby **the expansion of primary and secondary education led to an increased need for higher education.** In other words, as there is a relative increase in the schooling of a country's citizens, the middle class starts to demand a higher level of education in order to secure success in the society.

In response to this kind of increasing demand, at a global level, higher education also changed from the elite style prevalent earlier to mass higher education. Also, trends towards greater diversity among students and institutions and towards lifelong education have progressed. This movement towards mass education can be seen as a worldwide trend. However, it is not uniform; there are gaps between the situations in developing and developed countries, within urban and rural areas of the same countries, between the wealthy and the poor, males and females, and among different ethnic groups.[5]

[4] UNESCO (2000) p.67

[5] For example, the gross enrollment ratio for higher education in the Philippines is 30%, 20% in Egypt, and 39% in Argentina, while there are many countries in Sub-saharan Africa with a rate around 1%.

(4) Changes in the Political and Social Environment of Developing Countries

Changes in the political and social environment of developing countries: Increasing need for building civil society and cultivating social cohesion

The political and social environment of developing countries from the 1990s and the recent international situation were not unconnected with higher education. For example, when the socialist system of the Soviet Union and other Eastern European countries collapsed, in many countries democratic movements increased and issues of governance, civil society and human rights became to be debated. On the other hand, regional conflicts disputes and frequent occurrences of terrorism led to voices demanding peace and multiculturalism. Based on this background, **higher education is expected to contribute to the development of a healthy civil society and the cultivation of social cohesion.**

1-2-2 Roles of Higher Education

While there have been great changes in social environment as above-mentioned, roles of higher education are required to be recognized anew.

Roles for higher education in society:
- Training of leaders
- Training of a wide array of human resources
- Creation and communication of knowledge
- Higher education as a common intellectual asset
- Development of a healthy civil society and cultivation of social cohesion

(1) Development of Human Resources Necessary for Economic and Social Development

For a long time higher education has fulfilled the role of producing government and private sector leaders. Developing high-level human resources with the necessary knowledge and skills for economic and social development has been the most important role of higher education.[6] Added to this, in the current knowledge society where an entire society's knowledge level is at issue, **higher education cannot just develop a small number of leaders. It is becoming important to expand higher education so that a wide range of human resources can be developed** and the entire society's level of knowledge can be raised.

(2) Creation and Diffusion of Knowledge

In the creation and transmission of knowledge in a knowledge society, higher education is demanded to play a central role. In particular, the ability to apply knowledge and technical skills is extremely important to economic development.[7] Thus, higher education must not merely teach new technology, but must develop human resources who can evaluate the need for these technologies and apply them.

With the rise of a knowledge society, consciousness that higher education is no longer a luxury item and indispensable to a nation's social and economic

[6] For example, in educational development, international society has formed a consensus around the expressed goal of universal primary education. However, in order to realize this, the development of teachers via higher education and research in the field of education are essential.

[7] For example, Asian countries which are in the position of following the technology of more advanced countries have witnessed dramatic growth as a result of the application of their technology.

development has increased. Higher education is required to be reconceptualized as a common intellectual asset. As a common intellectual asset, higher education needs to be not an entity isolated from society, but to be connected with society and to actively respond to society's request. To make it possible, higher education is first of all required to concern itself in the development and diffusion of technology closely connected with society's needs.[8] In addition, in order to respond to diversifying needs, one must diversify educational content and the ways to provide services. One of the examples is the realization of distance education which can accompany the development of information technology.

On the one hand, the knowledge and technology society demands are extremely varied. But at the same time, the speed of technological innovation has increased and the period of usefulness for particular knowledge and technology has shortened. Because of this, it is necessary to have a system for continually gathering and choosing among the knowledge and technology and renewing it, and further developing the opportunities for lifelong education.

(3) Development of a Healthy Civil Society and Cultivating Social Cohesion

A role in reforming the social system and cultivating social cohesion is also demanded of higher education. This may be accomplished through the production of the common asset of new knowledge, including the spread of democratic values and respect for multiculturalism, the promotion of political participation, the strengthening of civil society and promotion of democratic governance.

Higher education's roles for individuals:
- Increase in income and improvement of quality of life
- Broadening of choices

(4) Means of Self-realization

For a nation, higher education is a means of developing the human resources necessary for economic development. At the same time it is a means to achieve self-realization for individuals. Concretely, **people can improve their income and quality of life through increasing knowledge or skills and then expand on their own choices available in life, including those related to work life**. In addition, lifelong education, which constantly renews individual knowledge and skills, needs to be guaranteed throughout the lifetime to respond to individual learning needs. Therefore, juts as one should guarantee basic education for all, one should guarantee opportunities for higher education equally, based on individuals' hopes and abilities.

[8] From the 1960s, the idea of "vocationalism," which held that universities should provide appropriate curricula to master the diversification of jobs, was debated. It was a way of thinking that for industry meant an expectation that knowledge and skills necessary at a job site would be reflected in university curricula based on industry's demands (Altbach (1994)). However, in the recent debate surrounding the knowledge society, more than a focus on strengthening curricula in particular specialized fields, the main emphasis is placed on sharing knowledge and on its application.

1-2-3 Current Situation and Issues in Higher Education

Added to the need to expand higher education opportunities, with the recent change in the needs for the quality, higher education in developing countries is faced with the following issues:

Issues:
- Expansion of enrollees
- Lack of financial resources
- Declining quality
- Diversified needs

(1) Enrollment Expansion and Gaps between Groups

The number of higher education enrollees which was 12,000,000 in 1960 grew to 88,000,000 in 1997. Particularly the rate of increase in developing countries is much more remarkable than in developed countries: in Africa - a 24 fold increase, a 16 fold increase in Latin America and an 11-fold increase in Asia and Pacific. However, this did not necessarily alleviate gaps among regions, between male and female, and among ethnic groups. Improvement regarding the male-female gap can now be seen in many regions, but the countries of West Africa are notable for their remaining gap.

(2) Limited Financial Resources

Even while the demand for higher education continues to grow, higher education institutions face a constant situation of limited budgets. On the other hand, in Sub-Saharan African countries where the financial situation is most severe, the per capita public expenditure on higher education is much higher than that for other educational levels. Among sub-Saharan African countries with the exception of South Africa, per capita public expenditure on higher education (operating expenditures only) is more than 100% of the per capita GNP;[9] there are many countries where this figure is several times the per capita GNP. Excepting India and Nepal, all countries in the Asian region have a per capita higher education expenditure that is up to 30% of per capita GNP. Comparing this, one should become conscious of just how poorly the per capita higher education expenditures in Sub-Saharan Africa match with the scale of the countries' economies. In order to respond to the rapid increase in enrollees in the future as well, it is indispensable to introduce the "user pays" principle, to diversify financial resources and to design programs with higher cost-performance by making use of information and communication technology.

In addition, in order for each country to survive in the globalized economy, it is necessary to have a clear higher education policy that is strategic about the development of human resources and the results expected of higher education, as well as strong political commitment. Because many higher education institutions are connected to the vested interested of the existing administration, in countries where the political system is unstable, the lack of political commitment can be a big obstacle to the development of higher education.

[9] The per capita public expenditure on higher education is especially high in Francophone African countries. One cause is the provision of scholarships.

(3) Declining Quality

In many developing countries, an expansion of higher education brings about declining quality. To secure quality education while responding to continued increasing demand, it is necessary to raise the quality of various aspects, including teachers, students, facilities, equipment, educational materials and methods, and financing. The quality of teachers is particularly indispensable for raising the quality of higher education; therefore, it is an urgent task to expand the number of students who complete graduate school. In addition, when higher education rapidly expands, the gap among different higher education institutions widens. In particular, in many countries, the lower quality of private universities compared to national public universities has been noted, and there is a need to create a system that will guarantee the quality of education and research.

(4) Diversified Needs

As a result of the expansion of higher education and the increasing complexity of society and the economy, higher education has needed to target the diverse backgrounds and needs of its students. Furthermore, various skills and abilities are demanded and to master them the levels of training have also become more diversified. The development of scientists and leaders at the elite higher education institutions is necessary, but the development of generalists through mass higher education is also necessary. Still on one more hand, together with the overall spread of education, specialized education that in the past took place at specialty schools or at the secondary level is now taking place at higher education institutions,[10] and higher education is expanding its scope from the academic to the professional sphere. Furthermore, demand has been not just for education for those who have completed secondary education, but to offer places of study for the general citizenry throughout the course of their lives. However, it is impossible to encompass all the functions of higher education at a single higher education institution. Thus, one will have to address the needs from now on by dividing higher education institutions by their specialties. In addition, broadcast universities and others that make use of information technology can offer many formats of education to respond to varying needs.

1-3 International Trends

1960s-1980s:
Assistance to vocational and technical education

1-3-1 1960s - Early 1980s

In developed countries higher education has witnessed significant changes over the past 50 years, and its positioning among donor countries has

[10] Nursing education and teacher education are representative examples.

had a large influence on trends in international aid.

In developing countries which achieved independence from their colonial past, higher education expanded with an unbelievable energy. The common idea arose that higher education institutions should provide the kind of curriculum in response to the needs of jobs that had been increasingly diversified and advanced. At the same time, based on the understanding that development assistance should efficiently develop human resources to promote economic growth, investment in education as a whole increased. At the higher education level, **technical education and vocational training directly connected with economic growth** came to be emphasized.[11] To donor countries, it was easy to limit cooperation to technical education where the connection to economic development as clearer than it was for basic or secondary education. It was also generally through that the results of such cooperation could be seen easily over a relatively short time.

1980s:
- Government expenditures reduction through the structural adjustment
- Basic education emphasized as fundamental human rights

1-3-2 1980s - Early 1990s

Entering the 1980s, amidst the world debt problem, a framework was constructed with World Bank and International Monetary Fund (IMF) structural adjustment programs at the core. In order to stabilize the macro-economy, the IMF set on developing countries **austere policies such as loan conditionality, reduction in budget expenditures and subsidies, higher taxes, and the reduction of wages of government workers. As a result, educational expenditures were reduced drastically,** and higher education budget in which per capita public expenditure (unit cost) was high was significantly affected. Furthermore, **the movement to recognize once again the importance of basic education as fundamental rights** gained strength and the idea that primary education's social rate of return was higher than that for higher education was advanced,[12] leading to primary education becoming the main current of educational aid.

World Conference on Education for All in 1990

With this flow of events, in 1990 **"The World Conference on Education for All"** was held in Thailand and a consensus for "Education for All" (EFA) was built. Because of this, developing countries and donors united to take on the issue of expanding basic education.

[11] Among the works that introduced the concept of "human capital" and called for the necessity of investment in education were Schultz, T.W. (1961) and Gary S. Becker ((1964) (1975)).

[12] Main proponents for the idea that the social rate of return of higher education is low include Psacharopolous, G. (1985). However, following this, various arguments were made about this research. The World Bank in a recent report concludes: "Methods of evaluating the benefits of higher education have been traditionally quite narrow, neglecting higher education's role in generating public goods. The rate of return to the individual has generally been measured in terms of higher salaries, with only the increased taxes these incur counted as a public benefit. By this measure, investment in higher education delivers significantly small public and private returns." (World Bank (2000) p.39)

From the latter half of the 1990s:
- Changes in the environment surrounding higher education
- Re-evaluation of the role of higher education
- Search for a new form assistance

1-3-3 From the Latter Half of the 1990s

In the 1990s, **rapid globalization of society and the information technology revolution brought about changes in society**. The role of knowledge in economic and social development became relatively larger and **reevaluation of the role of higher education** was demanded (Refer to 1-1 for detail).

The World Bank took as its theme for its annual World Development Report 1998/99 "Knowledge for Development," and discussed the role of knowledge in promoting economic and social development. Regarding the field of education, the report stated: "To narrow knowledge gaps, societies must ensure basic education for all and provide opportunities for people to continue to learn throughout their lives. Basic education is the foundation of a healthy, skilled, and agile labor force. Lifelong education beyond the basics enables countries to continually assess, adapt and apply new knowledge." It also stated about necessity of lifelong learning opportunities and the role for higher education in this point. Concretely, as an effective way of using the government's limited sources, the private education sector should be used and encouragement should be given to private and nongovernmental provision of education. Also the decentralization of educational administration was mentioned. Furthermore, if communication infrastructure could be set up, through virtual universities, increased access to higher education could be planned and the quality level of education raised.[13]

World Conference on Higher Education in 1998

In October 1998 as this movement to reevaluate the role of higher education was strengthening, **the World Conference on Higher Education (WCHE)** was held in Paris led by UNESCO and with 2500 education specialists from 162 countries in attendance. At this conference, the World Declaration on Higher Education was adopted and a consensus reached among the involved institutions on the importance of higher education and its future direction. The declaration contained 17 articles delineating a future direction for higher education reform and priority actions for change at three levels (national level, level of systems and institutions, international level). (For main points, refer to Boxes 1-1 and 1-2.)

Besides this conference, among other things, in 2000 the World Bank put out a report reviewing aid to higher education. Thus, one could see a **new movement toward higher education cooperation.**

Box 1-1 World Declaration on Higher Education for the Twenty-First Century: Vision and Action

In every country, higher education faces great challenges and difficulties on many sides. These include financing, access, improving quality and sustainability, employment of graduates, etc. In the latter half of the 20th century, higher education expanded conspicuously, but gaps in educational opportunities between industrialized

[13] World Bank (1999)

and developing countries and among different socio-economic classes within countries widened. Education is a basic pillar for human rights and democracy, sustainable development and peace; higher education in particular is necessary for solving the various problems we find as we approach the 21st century.

Missions and Functions of Higher Education:

1) Mission to educate, to train and to undertake research
2) Ethical role, autonomy, responsibility and anticipatory function

Shaping a New Vision of Higher Education:

3) Equity of access
4) Enhancing participation and promoting the role of women
5) Advancing knowledge through research in science, the arts and humanities and the dissemination of its results
6) Long-term orientation based on relevance
7) Strengthening co-operation with the world of work and analyzing and anticipating societal needs
8) Diversification for enhanced equity of opportunity
9) Innovative educational approaches: critical thinking and creativity
10) Higher education personnel and students as major actors

From Vision to Action:

11) Qualitative evaluation
12) The potential and the challenge of technology
13) Strengthening higher education management and financing
14) Financing of higher education as a public service
15) Sharing knowledge and know-how across borders and continents
16) From “brain drain” to “brain gain”
17) Partnership and alliances

Source: UNESCO (1998b)

Box 1-2 Framework for Priority Action for Change and Development of Higher Education

This part of the conference document takes the actions presented in the Declaration and shows who should pursue these actions and how, by dividing the actions into three levels: national, level of systems and institutions, and international.

Priority Actions at National Level:

1) Ending of discrimination, merging of research and education, student participation, academic freedom and institutional self-government
2) Expansion of access to higher level education in developing countries and provision of services matching needs
3) Linkages between secondary education and lifelong education, and implementation of assisted training
4) Shrinking of gaps between industrialized and developing countries through provision of cooperation from industry and national governments

Priority Actions at the Level of Systems and Institutions:

1) Clarifying the missions of each institution so that they meet society’s needs now and in the future

2) Strengthening cooperation between higher education and industry
3) Diffusion of uses of new science and technology
4) Strengthening of management capacity of educational institutions (e.g. interdisciplinary academic approaches, increased access for people with motivation and enthusiasm, strengthening of activities involving the community, building of relations with industry, establishment of transparent organizations that can withstand evaluation, improvement of teachers' educational capability and understanding of learning methods, promotion of research and strengthening of research in the higher education system
5) Expansion of access to higher education for adult learners

Actions to be Taken at International Level and, in Particular, to be Initiated by UNESCO:

1) Cooperation towards a comprehensive system
2) Promotion of academic mobility at the international level
3) UNESCO initiatives connected with other international linkages, clear setting of goals
4) Activities to change the "brain drain" to a "brain gain"
5) Promotion of improved relations with other international and national institutions and NGOs. Concretely, provision of information to other donor organizations, creation of databases, etc. Assistance to the poorest countries and regions where there is conflict or natural disaster.

Source: UNESCO (1998c)

Higher education and technical education have been traditionally the priority areas for Japan's educational assistance.

1-4 Trends in Japanese Assistance

Japan's assistance to higher education, outside of the Technical Cooperation implemented by JICA, includes the grant aid by the Ministry of Foreign Affairs, loan aid from the Japanese Bank of International Cooperation (JBIC) and acceptance of foreign students and research assistance of the Ministry of Education, Culture, Sports, Science and Technology (MEXT). Under the motto "Developing a country means developing its people," **priority of Japan's ODA has been placed on human resource development in higher education and technical education areas because they are thought to contribute directly to economic activity and technological progress.** Because of this, up until the 1980s, the main area of aid was that directed to establishment and expansion of faculties/departments in technological and scientific fields. However, towards the latter half of the 1980s, assistance for improving the research capacity of graduate schools and research centers in a wider array of fields began to be implemented. Recently, the target of the aid has widened even to university management and the field of higher education administration, and targets and forms of cooperation have been diversified. Below is an overview of trends in Japan's assistance to higher education covering the recent five years between 1997 and 2001.

Technical cooperation: Higher Education takes one of the pivotal positions among education sub-sectors by number of projects and personnel dispatched.

1-4-1 Technical Cooperation

JICA's assistance in the area of higher education amounted to 19% of its educational assistance over the period. Thus, along with vocational training/industrial and technological education and basic education, it constituted one of the central pillars of JICA's educational cooperation (Chart 1-2).

Within JICA's technical cooperation, the number of higher education projects was large, second only to those in the vocational training/industrial and technological education category. In 2001, 20 of 93 education projects, or approximately 20%, were in higher education. In technical training of overseas participants, in addition to counterpart training and third-country training, from 2000 long-term courses were started where academic credits could be earned, and in 2000-2001 163 long-term trainees were accepted into the program. Among those accepted into this training scheme, trainees in science and engineering, agriculture, environmental sciences, and medicine were numerous, but recently areas in educational administration such as school management and school office administration have been included.

In the area of dispatch of technical cooperation experts, higher education accounts for about 40% of education overall, which makes for a declining trend. The number of higher education experts dispatched in 2001 was less than 80% of the number in 1998. The specialty of the experts dispatched centered on science and engineering as in the past, but the number in social development fields like politics, political participation and gender as well as IT areas has been increasing.[14]

On the other hand, the number of JOCV and Senior Volunteers dispatched shows an upward tend. Those dispatched in the higher education area amounted to approximately 20% share of those in education overall (2001). Nearly 40% of those dispatched were teachers of Japanese language. Next were systems engineers and math and science teachers.

Diversifying cooperation schemes and areas

Besides them, in recent years, higher education assistance through other schemes than typical Technical Cooperation Projects has been implemented, even though the number of such projects is small. For example, Student Loan Program was established by use of the **"Development Study"** and projects such as "HIV Voluntary Counseling and Testing Center" and "Integrated Cooperative Research for Malaria Control" were implemented through the **"JICA Partnership Programs."**

In this way, the defining characteristics of JICA's technical cooperation are:

[14] For example, "Participatory Rural Development Methods and Approaches" (1998) and "Participatory Rural Development University Outreach Project" (2001) in Sri Lanka, and "Educational Applications of Internet Media" (2002) in Saudi Arabia were implemented.

1) **Cooperation for higher education remains a significant part of JICA' overall education cooperation.**
2) In addition to the traditional assistance for strengthening science and technology specialties, **cooperation for educational administration or other social science areas is increasing.**
3) Among the target regions, Asia comprises a large part but recently **the dispatch of JOCVs and experts to Africa is gradually increasing.**

Grant Aid:
"Japan's Grant Aid for Human Resources Development Scholarship"

1-4-2 Grant Aid

Grant Aid projects continue to be used to establish and construct schools and centers and outfit such facilities with equipment - relatively large-scale assistance of "hardware" type.[15] The majority of Grant Aid projects have assisted Asian countries, and grant aid to other regions has been rather limited. In addition, from 1999 **"Japan's Grant Aid for Human Resources Development Scholarship" (JDS)** was introduced. Based on the needs of developing countries, JDS would give financial assistance to Japanese universities with well-organized system for accepting foreign students. In 2001 4 of 7 Grant Aid projects in higher education were implemented under JDS, which has become a pillar of Grant Aid funding.

Loan Aid:
- Importance has been placed on Asia.
- Assistance by combination of "hardware" and "software."

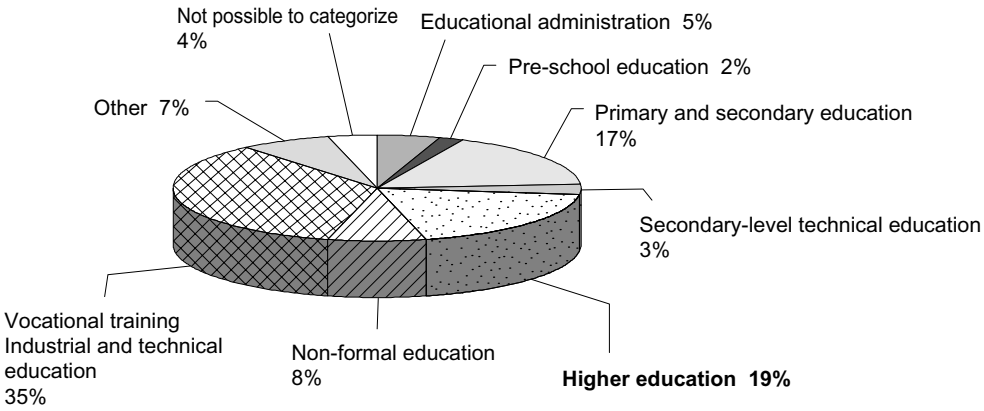
1-4-3 Loan Aid

The Japanese Bank for International Cooperation (JBIC)'s yen loans to the education sector have been limited compared to loans for other sectors. Of the 2,561 yen loan projects implemented from 1977-2002, only 51 were in education and the monetary figure amounts to only 1.6% of the loan total.[16] However, in the latter half of the 1990s, particularly following the Asian financial crisis, consciousness that human resource development was increasingly necessary had risen. Especially the idea that economic growth could be directly affected by higher education gave hope and became emphasized. Of the yen loans in the education area, 37 of the 51 were for higher education.

Of the loan aid projects in higher education as of 2002, all 37 were implemented in Asian countries. Of them, Indonesia had the most at 15, followed by South Korea (11). Recently, projects in China have been increasing. Fields targeted for these loans have been areas like basic science, chemistry, agriculture, and fishery and marine science. Thus, almost all have been in scientific and technical fields. Up until the mid-1980s, the main content of loan aid was provision of "hardware" for equipping facilities, and through that improving the environment for education and research. However, after the mid-

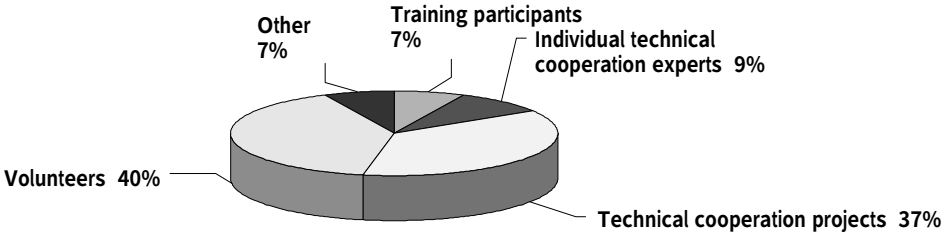
[15] In 1997-2001, the content of grant aid in higher education was 7 projects (35%) for establishment and construction of education and research institutions, 5 projects (25%) for provision of equipment, 7 projects (35%) for aid for foreign students and 1 project (5%) for university faculties/departments reform programs.
[16] JBIC (2002a) p.85

Chart 1-2 Higher Education Cooperation within Overall JICA's Educational Assistance



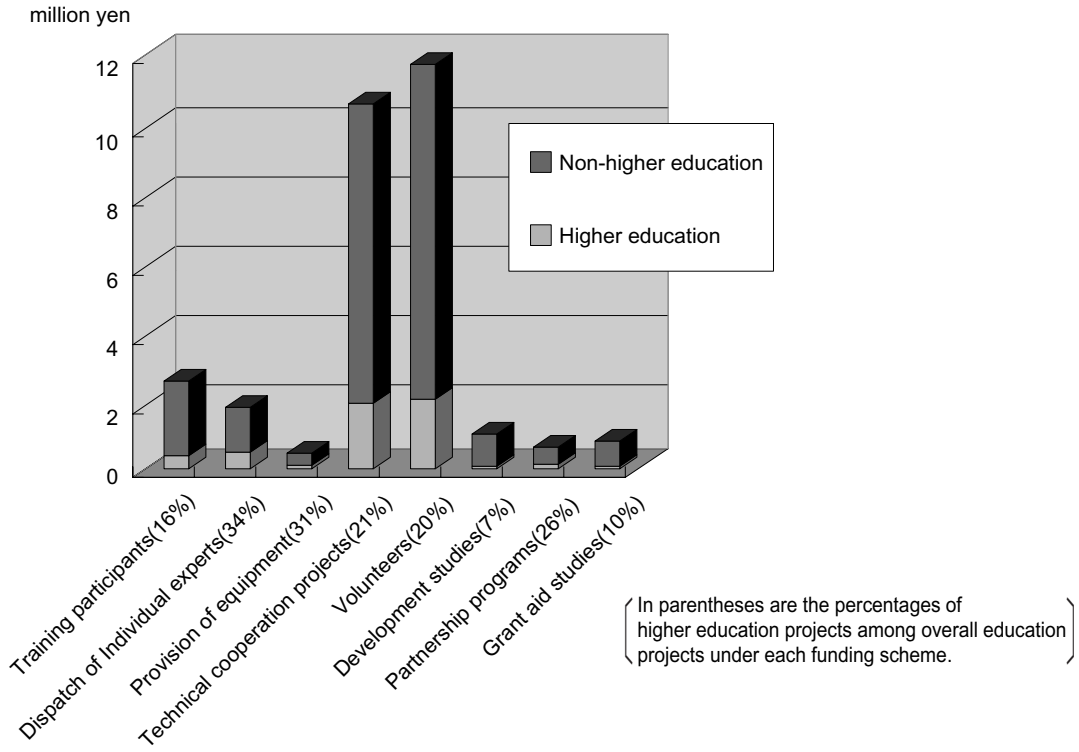
＊2001 JICA Educational Cooperation Project Expenditures by Sub-sector

Chart 1-3 JICA Higher Education Cooperation



＊2001 JICA Higher Education Cooperation Project Expenditures by Scheme Type

Chart 1-4 JICA Educational Cooperation



＊2001 JICA Educational Cooperation Project Expenditures by Scheme Type

1980s, added to this assistance for "hardware," there was an increase in aid for "softer" things related to human resource development such as loans for foreign students and exchange programs for teachers at higher education institutions.[17]

Box 1-3 JBIC's Cooperation to Higher Education in China

In China, in addition to economic and social changes such as the widening gap among regions resulting from rapid economic growth and the promotion of restructuring, the spread of primary and secondary education has brought about a rapid expansion in needs for higher education. Based on this background, in 2001, JBIC provided a 30 billion yen loan to the Chinese government to rectify regional inequities and train human resources to contribute to growing a market economy and promotion of industry. There were six target regions: the five provinces of Shaanxi, Gansu, Sichuan, Yunnan, and Hunan and the municipality of Chongqing. A total of 64 universities and normal schools in these areas received both "soft" and "hard" assistance. The "hard" assistance included better provisioning of the universities for their education work, including expansion and reconstruction of facilities, establishment of language laboratories, research equipment, and the introduction of an information network. "Soft" provisions, on the other hand, included a training and research program in Japanese universities for teachers from the targeted universities as the main content of assistance.

Source: JBIC (2002b) p. 24.

Assistance based on the "Plan to Accept 100,000 Foreign Students."

1-4-4 Acceptance of Foreign Students

The Ministry of Education, Culture, Sports, Science and Technology (MEXT or Monbukagakusho), based on the **"Plan to Accept 100,000 Foreign Students"**[18] by the beginning of the 21st century, has actively developed a system to support foreign students in Japan. The measures include the "Japanese Government Scholarship" ("Monbukagakusho Scholarship"), financial aid to privately financed students, assistance for foreign government-sponsored students with university preparatory course and living accommodation.[19] 45% of all the foreign students in Japan and 14% of Monbukagakusho Scholarship students studied at universities (undergraduate) while 80% of them were enrolled in graduate schools. In addition, 30% of Monbukagakusho Scholarship students majored sciences and engineering.[20] Thus, the assistance has been welcoming to graduate students and those in the sciences and engineering.[21]

However, if one compares these numbers with those of other

[17] JBIC Institute (2002) p.23
[18] MEXT (2001)
[19] The number of foreign students in 2001 was approximately 79,000.
[20] MEXT (2001)
[21] The costs for accepting the Japanese Government Scholarship (Monbukagakusho Scholarship) students amount to between one half and one-third of educational ODA. JICA's educational assistance is hoped to have systematic cooperation with MEXT.

industrialized countries, as in the past, the number of foreign students is still small. Thus, it is an urgent task to revolutionize the qualitative structure of universities by developing and expanding educational programs, taking care to address the obstacles faced by foreign students, and improving the systems and preparation for foreign students.

Bilateral scientific exchanges and Core University Programs in Asian countries

1-4-5 Promotion of Scientific and Academic Research

In order to plan for the promotion of scientific and academic research through international research exchanges, MEXT of Japan is implementing through the Japan Society for the Promotion of Science (JSPS) technical cooperation such as **bilateral scientific exchanges** and **Asian Science Seminars.** JSPS gives financial support for joint research projects and scientific seminars organized by Japanese and foreign researchers. JSPS also implements the **Core University Programs** providing a framework for international cooperative research in specific fields and topics at universities in Japan, ASEAN 6 countries, China and South Korea.[22] The Asian Science Seminars are held several times a year in Japan or other countries and introduce of the latest scientific advances and promote exchanges with between Asian researchers.

Cooperation through UNESCO – UNITWIN/UNESCO Chairs

1-4-6 Cooperation through International Institutions

MEXT of Japan cooperates with UNESCO and United Nations University in higher education. For UNESCO's educational projects, approximately 200 million yen of MEXT's ODA budget was appropriated (FY2003), and in the higher education area, cooperation was given for the establishment of **UNITWIN (University Twinning) / UNESCO Chairs.**[23] UNITWIN aims to build **networks of higher education institutions** between and among regions and has as its goal developing collaborative relationships among various schools and universities, between developing and industrialized countries. At present, Japan's Bunkyo University is participating in the Asia-Pacific Distance and Multimedia Education Network (APDEM), and is linking with universities in Australia, China, Indonesia, South Korea, Malaysia, the Philippines, Viet Nam and Thailand and developing a distance and multimedia education research network within the region. UNESCO Chairs program aims to promote interuniversity cooperation between high-level, internationally recognized and researchers and to develop Centers of Excellence (COE) in the region. At present, activities in several fields are taking place: 1) environmental management and development and design of infrastructure; 2) shipbuilding design; 3) sociology of comparative agriculture; 4) information and communications, and so on.

[22] JSPS (http://www.jsps.go.jp/english/index.html)
[23] MEXT "International Cooperation" (http://www.mext.go.jp/english/org/exchange/65.htm)

Box 1-4 Report of the Committee for International Cooperation in Education

The Committee for International Cooperation in Education, set up as a private advisory body for Japan's Minister of Education, Culture, Sports, Science and Technology submitted a final report concerning the Ministry's future policy for international educational cooperation on July 30, 2002. In the first part of the two-part report, based on current situation of the global tide towards Education for All evident at the Kananaskis Summit (2002) and the importance of educational cooperation for nation-building in Afghanistan, measures for "strengthening the structure of MEXT for the promotion of international cooperation," and "International cooperation system in primary and secondary education sectors" were recommended. In the second part of the report, "conversion of the international development cooperation system at Japanese universities" and "solidification of research and analysis system for ODA strategy" were included. In particular, a proposal was made for improving organization of Japanese universities for the development assistance.

The concrete recommendations about "conversion of the international development cooperation system at Japanese universities" include the shifting from the "individual" cooperation by university experts to the "organizational" cooperation in order to promote international development cooperation through universities. Also proposed were ideas like the establishment of a support center to strengthen mutual relationships between Japanese universities, international organizations and consulting companies, as well as overseas universities.

Source: MEXT (2002)

Besides above-mentioned cooperation, in order to promote academic cooperation between Japanese universities, academic associations and United Nations University (UNU), from 1992 MEXT provides assistance to the Japan-UNU Joint Research and cooperates for its effective and efficient management.[24]

[24] MEXT "International Exchange and Cooperation" (http://www.mext.go.jp/english/org/eshisaku/ekokusai.htm) JICA/IFIC (2000) p.120

Chapter 2 Effective Approaches for Higher Education

Four development objectives:
- Improvement of Educational Activities
- Strengthening of Research Function
- Furthering of Contributions to Society
- Improvement of Management

2-1 Four Development Objectives for Higher Education

If one considers the environment surrounding higher education and changes in the roles demanded of higher education mentioned in Chapter 1, the following sorts of key words come up regarding education reform in developing countries:

- Diversification of higher education institutions
- Promotion of lifelong learning
- Expansion of higher education and rectifying of inequities among groups
- Distance education and regional education through the application of information and communication technology
- Evaluation of higher education institutions and improvement of quality
- Networking of higher education institutions
- Cooperation with industry
- Promotion of private education
- Diversification of funding for higher education
- Governance, university self-government, and academic freedom

Touching upon these actual approaches to higher education reform, we will put forth four development objectives in this chapter: **Improvement of Educational Activities, Strengthening of Research Function, Promotion of Contributions to Society, and Improvement of Management.**

Details regarding each will follow.

2-2 Effective Approaches for Higher Education[25]

Development Objective 1
Improvement of Educational Activities

Development Objective 1: Improvement of Educational Activities

The central function of higher education is education. Through educational activities, human resources necessary for socio-economic development are turned out for society and, for individuals, opportunities in higher education that match individual needs and abilities are offered-the objectives of higher education institutions. Thus, the improvement of educational activities in higher education is important.

As directions for improvement, first, by diversifying higher education institutions, broader access can be secured and diverse needs in higher education can be responded to. Second, the quality of higher education must also be improved. Third, planning for the expansion of higher education opportunities for women and other vulnerable groups must take place so that inequities in higher education can be rectified.

Mid-term Objective 1-1:
Response to Diverse Educational Needs by Diversifying Higher Education Institutions

Higher education institutions must be diversified so that higher education can respond to diversifying needs in the society and so that access to higher education can be expanded.

Mid-term Objective 1-1: Response to Diverse Educational Needs by Diversifying Higher Education Institutions

Recently, together with the diversification and increasing level of socio-economic activities, a greater diversity in the ways higher education is structured is demanded. Also, from the perspective of the creation of a knowledge society, it is necessary to provide various forms of higher education to the whole society and to develop a broad population who can receive and apply knowledge. Furthermore, if one looks at the current situation of higher education in developing countries, as with industrialized countries, they are moving steadily down the road to mass education. Naturally, the spread of primary and secondary education pushes up the demand for enrollment in higher education, and therefore many countries are moving in the direction of expanding higher education. Demand is to guarantee opportunities widely in a way that meets individual needs and abilities.[26] Expansion of access to higher education is also important from the perspective of individual self-realization. **Through the**

[25] 2-2 "Effective Approaches for Higher Education" aims to discuss the various issues in the field of higher education in developing countries and various approaches for improving the situations analytically and comprehensively. In particular, the focus of the work is on clarifying the mutual relationships between objectives and means by looking at development objectives, then mid-term objectives, followed by sub-targets of mid-term objectives and examples of project activities. As a result, for each development objective, for each mid-term objective and for each mid-term objective sub-target, it becomes difficult to see the lateral connections. However, in actuality, those individual policies do not exist independently. It is hoped that care has been taken to design projects where these measures are effectively combined. For example, in many cases, in a project for assisting with the establishment of a university one should address the reform of educational activities, the research function and management at once. In order to strengthen the research function, in addition to the development of researchers, setting up a good research environment is necessary. In such a way, several strategic objectives and sub-objectives must be put together or there will be many cases where results are not achieved.

[26] In the World Declaration of Human Rights (1948): "Everyone has the right to education.... higher education shall be equally accessible to all on the basis of merit." (Article 26, Item 1).

diversification of higher education institutions, it is important for access to be expanded and for people's diverse needs to be met.

Diversification of higher education institutions is also necessary from the perspective of promoting lifelong learning.

In addition, recently, the speed of innovation in knowledge and technology is getting faster and faster, and it is becoming necessary not only to receive higher education in the period following secondary education and before going out in society, but on an as-needed basis throughout ones life in order to acquire new knowledge and skills. A higher education where entrance requirements and course of study are flexible and there is "freedom of entry and departure" throughout ones life is needed as a place for lifelong learning, and diversification of higher education institutions for this purpose is progressing.

Diversification of higher education institutions: Diversification in courses of study, distance education making use of information and communication technology, promotion of private education, regional universities that encompass several countries, etc.

The first type of **diversification** is **in the form of courses of study.** For example, one can set up a 2- or 3-year short-term higher education institution, set up a part-time program at night targeting adults, or have an open university using correspondence education and having no selection process for entrance. The second type of diversification is in **distance education making use of information and communication technology.** In addition to broadcast universities making use of TV or radio, computers and the Internet have caused the rapid development of distance education that is able to communicate a large volume of information at high speed, and this has led to the birth of online and virtual universities with no physical campus. The issues of the digital divide remain, but information and communication technology has made it possible for people to obtain higher education anytime, anywhere at a cheap price, which has contributed to expansion of access to higher education. In addition to this, one must develop diverse higher education institutions. **The promotion of private education** will diversify financial resources available to higher education and increase higher education opportunities. Also, for regions like the South Pacific and southern African regions where there are a number of small countries, one must **establish regional universities that cover several countries.**

The expansion of higher education enrollment adds a new financial burden for the finance of education, but by diversifying higher education, establishing short-term courses of study and by applying IT to conduct correspondence courses it is possible to expand higher education with less of a financial burden. From the perspective of educational finance, diversification of higher education is also necessary.

On the other hand, the expansion and diversification has resulted in part in a lowering of quality. In expanding higher education enrollment, it is also important to establish a public mechanism to prevent the lowering of higher education quality at the same time in addition to each institution's own efforts to raise quality. This should include the establishment and application of accreditation standards for higher education as well as evaluation and guidance. This point will be covered later in "Development Objective 4: Improvement of Management."

Mid-term Objective 1-2:
Raising the Quality of Educational Activities

Mid-term Objective 1-2: Raising the Quality of Educational Activities

Over the last half-century, enrollment in higher education in developing countries has risen immensely, but there are still many problems related to quality. Excluding a few exceptional cases, many higher education institutions in developing countries are only able to offer a less-than-adequate quality of education compared to industrialized countries. Classrooms and laboratories are in poor condition, overflow with students, and libraries are old and cannot provide adequate information. In addition, the number of computer facilities is lacking and it is impossible to access necessary information such as academic journals, the curriculum is out-of-date, the quality of both teachers and incoming students is low and there is no system for evaluating the educational activities. Among these problems, the lack of highly capable teachers exerts a big influence on higher education. The expansion of higher education of inadequate quality has no meaning from the very point that it cannot develop the human resources required by society. Moreover, it is a gigantic loss for the governments of developing countries making huge investments in education and for students who waste several years of opportunity cost. Thus, always looking at the quality issue is essential.

Raising the quality of education through improving teachers, students, curriculum, educational materials, facilities and equipment, etc. is necessary.

To address the issue of raising higher education quality, **improvements must be made in all the inputs such as teachers, students, curriculum, educational materials, and facilities and equipment.** Teachers must have appropriate qualifications, receive ongoing training opportunities, have a system set up where they can conduct enough educational and research activities and be provided with appropriate incentives, including adequate compensation. In addition, because the quality of students is an important factor affecting the internal efficiency[27] of higher education, it is necessary to have a fair selection mechanism for selecting high quality students, and appropriate guidance after entry is necessary. However, even if efforts are made to address issues in higher education, if a high enough quality of primary and secondary education do not take place and students do not enter prepared with the necessary basic academic capability, it will be difficult to improve the quality of higher education. From this perspective, one should recognize coordinated reform of the entire education system is also important.

A quality assurance system that has standards for accrediting higher education institutions is necessary.

In order to guarantee and raise the quality of diverse forms of higher education and make sure of its international compatibility, together with improving inputs such as teachers, students and educational facilities, it is becoming necessary to have **an accreditation system in which proper agencies**

[27] Internal efficiency is the relationship between input (investment) and output (results). In the education field, student repetition rates and graduation rates are often used as indicators. In contrast to this, external efficiency reflects the relationships between education and employment (labor).

evaluate educational activities. However, among developing countries, there are some that still have no public agency that authorizes and accredits higher education institutions. On the other hand, higher education in developing countries is riding a rapid wave of globalization, and not only teachers, but students and graduates often relocate within the region or internationally. Because of this as well, the quality of higher education institutions must be assured. In the Development Objectives Chart in this section, quality assurance is connected not only with educational activities but with the institutions themselves, including their research activities. Thus, the issue is included in "Development Objective 4: Improvement of Management."

Mid-term Objective 1-3:
Expansion of Female Enrollees and Enrollees from Other Vulnerable Groups

It would be best to increase the number of enrollees from vulnerable groups including women and minorities, in order to rectify educational inequities.

Mid-term Objective 1-3: Expansion of Female Enrollees and Enrollees from Other Vulnerable Groups

In many cases, circumstances for moving on to higher education are favorable for children of wealthier classes in the society and there is a gap with the poor, and certain castes, ethnic groups, speakers of certain languages, between the urban and rural dwellers and in terms of gender. The main causes of vulnerable groups being excluded from higher education are the academic gap that impacts on the selection process for entry, the burden of tuition and living expenses, and other factors like the discriminatory social environment for employment. Not only are these higher education gaps socially unfair but they mean that human resources with hidden abilities are not able to be absorbed appropriately into the institutions and given appropriate training. Therefore, **the inequalities in higher education must be rectified and one must plan to expand higher education enrollment opportunities for women, minorities and other vulnerable groups.**

In terms of concrete policies, in addition to providing higher education services that meet the needs of women and other vulnerable groups and diversifying higher education institutions in ways that meet their needs, it is also necessary to prepare the social environment to respond to these people by having a facility to assist with employment after graduation and advocacy to enlighten the publics. Also, there is a necessity, where appropriate, to consider affirmative action[28] policies such as a relaxation of entrance standards for women and other vulnerable groups and subsidization of tuition fees. Also important to the promotion of enrollment of vulnerable persons is improvement of governance of the institutions and promotion of democracy in that governance, and participation of various actors in the management of the institutions. However,

[28] Affirmative action policies like relaxation of entrance standards and setting aside places for certain groups invites the possibility of a reduction in quality. Therefore, these policies need to be coupled with care after entry for students receiving the preferential treatment. Also, whether each type of preferential treatment is truly fair will often be judged differently by different people and there needs to be enough debate in applying certain policies.

the biggest cause of the enrollment inequalities is the gaps in academic abilities at the entry point which is caused by the gaps at the levels of primary and secondary education, so if such gaps are removed at an early stage, inequalities in higher education will close significantly.

JICA's Activities:
- Recently, examples of JICA cooperation to diverse forms of higher education are increasing
- Raising the level of educational activities has long been a centerpiece of JICA higher education cooperation
- There are no examples yet of JICA cooperation to expand higher education enrollment of women and other vulnerable groups

JICA's Activities

There are several examples of approaches in JICA's assistance, though few, in the area of Mid-term objective 1-1, "Response to diverse educational needs through diversification of higher education institutions." These include cooperation with engineering polytechnics with the aim of developing technologists (Indonesia: Electronic Engineering Polytechnic Institute of Surabaya, Saudi Arabia: Riyadh College of Technology, etc.); cooperation for various types of short-term educational courses of study (Laos: Lao-Japan Center for Human Resource Cooperation, etc.); cooperation with distance education making use of information and communication technology (Malaysia: Multimedia University, Sri Lanka: University of Colombo School of Computing); and cooperation with regional universities that cover several smaller countries (Fiji: South Pacific Distance Education, etc.). Recently, higher education needs in developing countries have been rapidly diversifying, so JICA has been working to respond to these diverse higher education needs, and **examples of cooperation to diverse forms of higher education institutions are increasing.**

Mid-term objective 1-2, "Raising the quality of education activities," has long been a central area for JICA cooperation in higher education. **There are many examples of cooperation to expand or improve education in university departments.** The cooperation with Jomo Kenyatta University of Agriculture and Technology in Kenya and King Monkut's Institute of Technology in Thailand are not only good examples of higher education cooperation but are frequently mentioned as representative examples of Japanese ODA. There are more examples. Many of these cooperation examples target the agriculture, engineering and medical departments of universities, and facilities and/or equipment are provided through grant aid and as a part of technical cooperation. In other cases, long-term experts are dispatched to provide technical guidance to counterpart teachers, improve curriculum or develop educational materials. Also, a new approach increasing in frequency is not to target a single university but to make use of a network of several universities with a project aiming to improve education and research capacity. For example, the "Higher Education Development Study" project in Indonesia involves cooperation of 11 domestic universities, the "Southeast Asia Engineering Education Network" project involves cooperation of 19 universities in the ASEAN countries, and the "National University of Laos Engineering Diploma Program," by linking National University of Laos and King Monkut's Institute of Technology,

Lakrabang in Thailand, aims to raise teacher capabilities and improve curriculum.

JICA has almost no examples of cooperation under Mid-term Objective 1-3: "Expansion of female enrollees and enrollees from other vulnerable groups." JICA's higher education cooperation up until now has not approached higher education from the aspect of gender and educational inequalities, but one can look forward to this kind of approach in the future.

Development Objective 1 Improvement of Educational Activities

Mid-term Objective 1-1 Response to Diverse Educational Needs by Diversifying Higher Education Institutions

Sub-targets of Mid-term Objectives	Examples of Activities	Case No.	JICA's Main Activities
Diversification of Courses of Study	○Promotion of establishment and expansion of community colleges and polytechnics	1,3,9	• Assistance for establishment and expansion of polytechnics, business courses, etc. (Technical Cooperation, Grant Aid)
	△Promotion of establishment of short-term programs (e.g. technician training course, business course, etc.)	11,15,20	
	×Promotion of establishment of part-time programs (evening classes, etc.)		
	×Promotion of establishment of open universities		
Promotion of Distance Education by Making Use of Information and Communication Technology	×Distance education making use of television, radio and telephone		• Assistance for establishment and management of distance education systems (Technical Cooperation)
	△Building and operation of distance education systems making use of information and communication technology or satellite broadcast	11,15,28	
Promotion of Private Education	×Promotion of establishment of private higher education institutions		
Provision of Higher Education through Regional Cooperation	△Establishment of regional universities	28	
Adjustment of Systems to Make Diversification of Higher Education Possible	×Relaxation of standards for establishing higher education institutions		
	×Arrangement of laws and tax systems to promote private education		

Mid-term Objective 1-2 Raising the Quality of Educational Activities

Sub-targets of Mid-term Objectives	Examples of Activities	Case No.	JICA's Main Activities
Improvement of Teacher Quality	◎Implementation of programs for technical guidance and training of teachers, and for them to obtain degrees	1, 5, 6, 9, 12, 13, 16, 20, 22, 23, 25, 26, 27, 28	• Assistance for establishment and expansion of university faculties/departments (Technical Cooperation, Third-country Training)
	△Implementation of appropriate teacher evaluation	20	
	×Establishment of a bonus system for teachers		
	×Improvement in the benefits and security system for teachers (salary, various allowances, promotion, retirement pay, etc.)		
Improvement of Student Quality	△Implementation of guidance and counseling for students		
	△Review of the entrance examination system (e.g. making entrance standards and the selection process more appropriate)	9	
	×Appropriate provision of scholarships and loans		

Sub-targets of Mid-term Objectives	Examples of Activities	Case No.	JICA's Main Activities
Improvement of Curricula	◎Establishment of appropriate curriculum (e.g. yearly teaching plan, unit planning, content of subjects taught, exercises, evaluation methods, etc.)	1,4,5,6,8,9 ,10,11,12	
	△Ensuring compatibility of courses of study among higher education institutions within a region or country through collaboration (networking, etc.)	10,25	
Improvement of Teaching Methods	◎Proposals and training on effective and efficient teaching methods	4,5,6,8,9, 10,13,15,16	・Assistance for establishment and expansion of university faculties/departments (Technical Cooperation)
	○Planning, establishment and implementation of teaching methods using information and communication technology	15,25,28	
Improvement of Textbooks	△Promotion of development of multimedia educational materials and teaching methods making use of information and communication technology	25,28	・Assistance for establishment and expansion of university faculties/departments (Technical Cooperation)
	◎Development and improvement of educational materials (e.g. teacher guidebooks, translations of works in local languages, creation of manuals, lecture materials)	1, 5, 6, 8, 9, 11, 19,20, 22, 25, 28	
Improvement of Facilities and Equipment	○Extension and rebuilding of classrooms and laboratories	3	・Furnishing and improvement of educational facilities and practical training equipment (Technical Cooperation)
	◎Provision of machinery for experiments and hands-on learning	1, 3, 5, 9, 10, 12, 13, 14, 19, 20, 22, 23, 28	
	△Equipping of libraries	11	
	×Provision of student dorms and other accessory facilities		

Mid-term Objective 1-3 Expansion of Female Enrollees and Enrollees from Other Vulnerable Groups			
Sub-targets of Mid-term Objectives	**Examples of Activities**	**Case No.**	**JICA's Main Activities**
Research and Outreach Activities on Higher Education Enrollment of Females and Other Vulnerable Groups	×Research, field surveys, and surveys of consciousness on the enrollment of females and other vulnerable groups in higher education		
	×Implementation of various types of outreach activities concerning higher education enrollment of females and other vulnerable groups		
	×Use of females and members of other vulnerable groups who have completed higher education as role models		
Introduction of Affirmative Action Enrollment Policies for Females and Other Vulnerable Groups	×Introduction of quota systems for higher education entry of females and members of other vulnerable groups		
	×Relaxation of academic standards for higher education entry for females and members of other vulnerable groups		
	×Priority scholarship consideration for females and members of other vulnerable groups		
Diversification of Higher Education Institutions to Meet the Needs of Females and Other Vulnerable Groups	×Provision of low-cost courses of study (correspondence education, short-term courses, etc.)		
	△Provision of courses for people in remote areas (distance education, etc.)	25,28	
	×Provision and expansion of educational facilities that pay attention to gender issues (dorms, satellite facilities, etc.)		
	×Increased flexibility in courses of study (part-time courses, short-term courses, etc.)		

Sub-targets of Mid-term Objectives	Examples of Activities	Case No.	JICA's Main Activities
Employment Assistance after Graduation for Females and Members of Other Vulnerable Groups	×Shaping of a labor market that is fairer and more open ×Priority provision of employment information to females and members of other vulnerable groups		
Rectification of Inequities in Primary and Secondary Education for Females and Members of Other Vulnerable Groups	*Refer to JICA/IFIC(2002)		

Examples of Activities:
◎=JICA has considerabele experience
○=JICA has certain experience
△=JICA has experience as a component of projects
×=JICA has little experience

Development Objective 2:
Strengthening of Research Function

"Strengthening of research function" is an essential issue, particularly for science-related universities and graduate schools

Development Objective 2: Strengthening of Research Function

As expressed earlier, along with educational activities and contributing to society, research is one of the important functions of higher education institutions. Research activities develop human resources in higher education and, moreover, are activities that are indispensably connected with improvements of educational activities. Also, the dissemination of the results of research activities contributes to society. However, in developing countries, there are many higher education institutions whose research capacities are inadequately developed, and this exerts a big drag on the other functions of education and contributing to society. Therefore, **strengthening of the research function is an issue that cannot be avoided in strengthening higher education institutions in developing countries, particularly institutions focusing on the sciences.**

Mid-term Objective 2-1:
Development and Strengthening of the Capacity of Researchers

Mid-term Objective 2-1: Development and Strengthening of the Capacity of Researchers

Mid-term Objective 2-2:
Improving the Research Environment in order to Strengthen the Research Function

Mid-term Objective 2-2: Improving the Research Environment in order to Strengthen the Research Function

Regarding the former, one should increase the number of teachers who hold Master's Degrees and Ph.D.s, and it is essential to promote the systematic development of researchers, using study away opportunities domestically or internationally and exchange programs with other higher education institutions. However, research activities cannot be accomplished overnight even if one promotes the development of researchers. It is needed to improve and vitalize research activities on a continuing basis, one must assist by providing follow-up guidance and advice to researchers after training/study through the dispatch of professors from Japanese universities or information and commutation technology, or through the human networks developed through higher education

In order to “strengthen the research function,” it is necessary to approach from two sides - by developing and strengthening the human resources who conduct research activities and by concrete improvements to the institutional environment that will make research activities possible.

study at other institutions.

Also, in developing countries, because basic infrastructure for academic activities - such as libraries and laboratories and laboratory equipment - are insufficient, there are not a few cases in which it is physically impossible to conduct research activities. Therefore, along with the development of researchers, it is important to raise the quality of research by building the foundation for research activities in a research environment with the needed facilities and equipment. However, if one doesn’t take care to consider the level of research at the institutions before providing these facilities or equipment, there is a chance they will not be used appropriately. Thus, one must take special care on this point. Also, recently, along with the above kinds of traditional facilities and equipment, securing access to online journals and appropriate research networks have also become a key part of the infrastructure for research.

There are many cases in developing countries where there is no consciousness of the importance of research activities. Thus, it is important to cultivate a ground where research will be pursued actively.

In addition, in developing countries, there are many cases where even at graduate schools in the sciences **there is little consciousness of the importance of research and where research activities are not taking place. Therefore, it is important to emphasize the significance of the research function to higher education institutions and cultivate a ground where research will be pursued actively.** In order to do this, as an incentive for research activities, useful policies one can think of are provision of research funds and promotion of collaborative research. In addition, expanding opportunities to present research findings such as presentations at meetings of international academic societies and submissions to international academic journals are indispensable to encouraging and raising the quality of research. Together with this, on a domestic level, assistance for publication of university journals and academic journals, and establishment of academic societies can be considered important because they secure a means of presenting research findings to the outside world.

JICA’s Activities

JICA’s Activities:
The main means has been through a combination of technical cooperation and grant aid. Recently, long-term training and grant aid for foreign students in which participants are able to obtain academic credit in Japan are becoming more popular.

Looking at JICA’s assistance up until now, there has been little assistance focused solely on strengthening research activities. However, there are many projects where this area has been addressed together with improvement in educational activities. As a strategy for strengthening research activities, **the main focus has been on guidance and advice from Japanese instructors dispatched for short or longer terms or provision or improvement of facilities and equipment through funding schemes such as grant aid.** The HEDS (Higher Education Development Study) project implemented in Indonesia from 1990-2002 involved innovative forms of cooperation such as giving teachers at the targeted universities the opportunity to study at the top schools within Indonesia or conducting collaborative research between universities in Japan and the targeted universities in Indonesia. However, this

example could be said to be rather exceptional.

However, after this, **the long-term training and grant aid for foreign students funding schemes were started, and credits from academic institutions in Japan could be obtained. Thus, having trainees study in Japan was actively employed as a way of strengthening the research function at higher education institutions in developing countries.** Also, the Southeast Asia Engineering Education Network project (AUN/ SEED-NET) was started in 2002, and through building a network of 19 universities in ASEAN countries and 11 within Japan, it aimed to strengthen the targeted educational institutions. This was done through a combination of inter-regional study abroad experiences (for example, someone at Cambodia Science University would study at Chulalongkorn University in Thailand), and chances to study abroad in Japan. Also, there is a trend of expanding assistance towards things like research funds and participation and academic presentations at international academic conferences now that recognition of their importance has deepened.

Development Objective 2 Strengthening of Research Function

Mid-term Objective 2-1 Development and Strengthening of the Capacity of Researchers

Sub-targets of Mid-term Objectives	Examples of Activities	Case No.	JICA's Main Activities
Training of Researchers	○Establishment and expansion of graduate-level courses of study and research centers	2,7,11,12, 29	• **Assistance for expanding and equipping graduate schools (Technical Cooperation)** • **Equipping and strengthening research institutes (Technical Cooperation)** • **Implementation of student exchange programs (Technical Training of Overseas Participants, Grant Aid)**
	◎Implementation of short-term training (e.g. organization of technical guidance, seminars, short training courses, workshops, symposia; implementation of mutual exchange projects, etc.)	2,6,7,8, 18,23	
	○Implementation of " study away " programs (abroad, regionally, nationally)	7,23,26, 29	
	◎Improvement of research content and methods	2,6,10,12, 17,18,21,29	

Mid-term Objective 2-2 Improving the Research Environment in order to Strengthen the Research Function

Sub-targets of Mid-term Objectives	Examples of Activities	Case No.	JICA's Main Activities
Improvement of Facilities and Equipment	◎Provision of research equipment (implements for experiments, etc.)	7,12,18, 23,26	• **Furnishing of research facilities and equipment (Technical Cooperation)**
	○Provision of research facilities and equipment (laboratories, etc.)	7,18,23	
	×Promotion of access to online journals		
	×Promotion of international joint use of research facilities		
Securing of Opportunities for Presentation of Research	△Attendance and academic presentations at meetings of international academic societies	6,23	• **Assistance for expanding and equipping graduate schools (Technical Cooperation)** • **Assistance for expansion and solidifying university education (Technical Cooperation)**
	○Organization of seminars and workshops on research results	2,23,26	
	△Promotion of establishment of academic associations and of institutional publications	26	
	×Promotion of presentations through means such as the use of online journals		

Sub-targets of Mid-term Objectives	Examples of Activities	Case No.	JICA's Main Activities
Vitalization of Research Activities	△Building of domestic and international inter-university networks	23,26	• Assistance for expanding and equipping graduate schools (Technical Cooperation) • Assistance for expansion and solidifying university education (Technical Cooperation)
	○Planning and initiation of functional units for developing joint research	23,26,29	
	△Creation of a system for securing research funds (e.g. competitive funds)	23	
	×Creation of an incentive system for research activities (e.g. research allowances)		

Examples of Activities:
◎=JICA has considerabele experience
○=JICA has certain experience
△=JICA has experience as a component of projects
×=JICA has little experience

Development Objective 3:
Promotion of Contributions to Society

Development Objective 3: Promotion of Contributions to Society

Along with educational and research activities, the important functions of higher education institutions include activities to contribute to society by returning the accumulated knowledge directly back to society. As the role of higher education has become reevaluated in society, these kinds of societal contributions have become demanded more and more. In this section, we will discuss the relationship between society and higher education from two perspectives-that of assistance to community development activities and that of cooperation with industry.

Mid-term Objective 3-1:
Assistance to Community Development Activities

Higher education institutions must be actively involved in the issues their local community face and directly contribute to their solution.

Mid-term Objective 3-1: Assistance to Community Development Activities

Many issues in development have become more diversified and complicated, and it has become necessary to search for development solutions that match the socio-economic situations in different local societies. Within this context, **higher education institutions cannot be isolated from society, but must be actively involved in the issues society faces and contribute to their solution.**

Education and research activities do not only deal simply with universal truths and issues. People are looking at development issues in their communities and taking them on in the educational curriculum and as research subjects. Also, not only through education and research, but the number of higher education institutions implementing local development activities directly or providing community development organizations with technical guidance and information is increasing. This way of involving teachers and students directly in community development activities is also useful for helping higher education institutions to direct their education and research interests more towards addressing society's problems.

Mid-term Objective 3-2:
Strengthening of Cooperation with Industry

Together with developing human resources that match the needs of industry, strengthened cooperation with industry such as collaborative research and human resource exchange have been demanded.

Mid-term Objective 3-2: Strengthening of Cooperation with Industry

One of the important roles of higher education is to develop the human resources necessary for socio-economic development and, by sending them out into the world of work, to contribute to economic growth. Also, **other contributions of higher education to industry have been demanded such as not only providing human resources with skills and knowledge, but cooperating directly with industry in conducting collaborative research and engaging in human resource exchange between teachers and industry technical specialists.**

First, if one looks at the provision of graduates to industry, over the last half-century of higher education turning out graduates in developing countries, in many countries, the hoped-for economic growth has not been achieved and the stubborn reality is of unemployment and underemployment of higher education graduates. Regardless of the economic situation, the number of people hoping to enroll in higher education has increased greatly and there is the dilemma that, while there is a need to widen the doors and accept more enrollees, on the other hand, the greater the number of graduates, the worse off the unemployment problem will be.

Also, with rapid technological innovation and structural changes in industry, the human resource needs of industry are also changing. Yet, despite this, one cannot deny that higher education has been unable to respond to these changes.

In the world of industry, the speed of innovation in technology and information has accelerated. In this situation, there is demand for human resources completing higher education who are generalists and have mastered knowledge and skills that enable them to respond to changes in the structure of their job or technological content. On the other hand, specialists who can respond to a higher level of work and greater complication of a specific type of job are also necessary.

The issues in the relationship between higher education and industry not only differ depending on the country, region and type of industry; they also vary based on future economic and societal prospects. However whatever the case, to solve the problems, strengthening cooperation between higher education and industry is necessary. Because the needs of industry are varied and change very easily, the building of mechanisms to prevent miscommunication are necessary such as having industry participants in the managing apparatus of higher education institutions and human resource exchange between university researchers and industry technologists. Also, it is necessary to conduct education and research aligned with the needs of industry-which can be accomplished by having people affiliated with industry join in discussions about curriculum

development of higher education institutions, by the promotion of collaborative industry-university research and by discussion of a plan for long-term human resource development in collaboration between higher education institutions and industry. Furthermore, cooperation with industry is necessary for improving the employment situation of graduates. Industry must provide employment information, implement internship opportunities and moreover, teach and develop entrepreneurial skills.

JICA's Activities:
- JICA has some pioneering examples of projects to assist community development activities
- Concerning strengthening cooperation with industry, there are examples of JICA projects involving engineering cooperation, but JICA's project experiences in this area have not been systematized.

JICA's Activities

Concerning mid-term objective 3-1 "Assistance to community development activities," there are not a large number of JICA projects, though there are several. "The Sokoine University of Agriculture Centre for Sustainable Rural Development" in Tanzania a pilot project involved cooperation to develop a plan for alleviating rural poverty, and in the project "African Institute of Capacity Development" in Kenya, issues common to Africans across the continent are taken up and, through the cooperation of other African universities, collaborative research and training has been implemented. Examples of JICA cooperation in higher education in which regional issues are taken up and collaborative research and human resource development are conducted have increased recently, and this is probably because university contributions to society have been demanded more and more strongly.

Concerning Mid-term Objective 3-2 "Strengthening cooperation with industry," there are various examples centering on cooperation projects in the engineering fields. For example, in Indonesia, "Higher Education Development Study" and in Thailand "Pathmuwan Technical College Improvement Plan" in which collaborative research between the school and industry was supported, and also in Thailand, KMITL (King Monkut's Institute of Technology Ladkrabang) in which students were provided with internships in industry. Also, in Indonesia's "The Strengthening of Polytechnic Education in Electric-Related Technology Project" and "Higher Education Development Study," job placement centers were established within the schools and, while supporting students' securing of employment, also served as a means for the schools to understand the needs of industry.

However, each of these activities is pursued in a separate project conducted experimentally, and the experiences have not yet been gathered and shared more widely. In engineering-type projects that seek to make up for a deficit of technologists in industry, developing cooperation with industry is essential, and in the future the accumulation and sharing of these experiences and wisdom will be important.

Development Objective 3: Promotion of Contributions to Society

Mid-term Objective 3-1 Assistance to Community Development Activities

Sub-targets of Mid-term Objectives	Examples of Activities	Case No.	JICA's Main Activities
Understanding of Needed Community Development Activities	△Survey research to determine development issues based on the special characteristics of the community and specific areas for training	21,24, 28,29	
Improvement of Education and Research Curricula so that Education matches Community Development Needs	×Participation of community development practitioners in curriculum development		• Promotion of educational and research activities matching community development needs (Technical Cooperation)
	○Research on appropriate technological development that meets the needs of the community	21,18,28	
	○Provision of education and esbalishment of training capacity that meet the needs of the community	9,15,22, 28	
Planning, Technical Assistance and Provision of Information Related to Community Development Activities	×Implementation of community development activities, technical guidance for the implementation of community development activities, and expansion of consultancy services (Extension and Consultancy Services)		
	×Establishment of different types of open courses for adults (IT, English, etc.)		

Mid-term Objective 3-2 Strengthening of Cooperation with Industry

Sub-targets of Mid-term Objectives	Examples of Activities	Case No.	JICA's Main Activities
Understanding of Industry Recruitment and Human Resource Needs	△Survey and analysis of graduates' employment data	22,23	
	△Survey and analysis of the human resource needs of industry	1,23	
Creation of a Mechanism for Collaboration between Higher Education Institutions and Idustry	×Participation of industry representatives in various management and advisory structures of higher education institutions		
	×Exchange between educators and researchers at higher education institutions and industry personnel		
Improvement of Education and Research Curricula to Meet Industry Needs	×Participation of industry representatives in curriculum development		• Expansion and strengthening of polytechnics and engineering education (Technical Cooperation)
	○Implementation of joint industry-university research	23	
	×Promotion of recognition of the various types of higher education institutions established by industry		
Improvement of the Employment Situation of Graduates	○With the cooperation of industry, provision of employment information and counseling	1,22,23	• Expansion and strengthening of polytechnics and engineering education (Technical Cooperation)
	△Implementation of internships in industry for current students	7	
	×Student participation in industry-university joint research		
	×Development of entrepreneurial skills in higher education programs		

Examples of Activities:
◎＝JICA has considerabele experience
○＝JICA has certain experience
△＝JICA has experience as a component of projects
×＝JICA has little experience

Development Objective 4:
Improvement of Management

Development Objective 4: Improvement of Management

Up until now, JICA's assistance to higher education has centered on transfer of various types of specialist knowledge and technology. However, in order to improve and maintain improvements in the overall quality of the education and research functions of universities, and to respond to the diversification of needs that comes with changes in society, one must look at the higher education sector as a whole, and look at the improvement of management in educational institutions as a whole.

Management is an area that intersects with all the other functions of higher education and is indispensable for all these other functions to work smoothly. Lately, in aid to higher education, assistance for establishing policies and systems across the entire higher education sector and the management system of higher education institutions is gaining attention.

Mid-term Objective 4-1:
Establishment of Legal, Institutional and Financial Frameworks

It is important to establish consistent legal, institutional and financial frameworks for the development of higher education

Mid-term Objective 4-1: Establishment of Legal, Institutional and Financial Frameworks

Higher education is intimately connected with a country's socio-economic situation (wages and income, employment, labor market policies, national science and technology policies, etc.), and the primary and secondary education sector. Therefore, it is necessary to establish policy frameworks that are linked with them. Furthermore, it is important to establish and implement a higher education program that is based on international agreements and goals, the current situation of the country, the content of national development plans, the needs of country's people, and trends in other sectors. Also, **it is important to build a cooperative relationship between higher education institutions and national-level planning and coordination bodies so that one can establish consistent legal, systemic and financial frameworks for the development of higher education, and take care of the especially important financial appropriations for higher education.**

Mid-term Objective 4-2:
Strengthening the Management Function

Mid-term Objective 4-2: Strengthening the Management Function

Many higher education institutions in developing countries face problems such as limited national funding sources, lowering of quality resulting from rapid growth in numbers of students, and an inefficient management system. In order to address these issues, effort by the institution itself in the area of management is necessary. Also, higher education institutions, while being given the chance to administrate their institutions autonomously, on the other hand have a mission to conduct a high level of education and research and to guarantee services for the community. Thus, they have the burden of accountability to government, students and the general public for a clear and

It is important to strengthen the management function by training government administrators and administrative staff of higher education institutions, introducing internal information systems, improving teaching staffs, and developing a system for maintaining and managing facilities and equipment.

straight-forward explanation of the results they are achieving[29] (UNESCO (1998)).

As an approach to the management of higher education institutions, the higher education administrative function must be made more efficient through training government administrators, internal institutional management must be improved through training of administrative employees and introduction of an internal information system, the teaching staff must be improved, and facilities and equipment must be used efficiently and effectively.

Mid-term Objective 4-3: Improvement of Finance

Mid-term Objective 4-3: Improvement of Finance

It is important to make efforts to secure diverse financial resources and to use limited budget efficiently.

At present, global trends in higher education expenditure include the principle of some burden being borne by the beneficiaries, a comparative increase in private education, and introduction of tuition fees at public institutions or cost increases. In developing countries, too, the establishment of private universities run using private funds is increasing.

In developing countries, based on limited government finances, the financial foundation for higher education institutions is fragile, and there are many cases where efficient use is not made of these limited resources. **Diversification of resources** such as securing funds from the private sector or selling agricultural products in a way that makes use of research results, or consulting work, **is important for securing a financial foundation as well as making use of limited budgets.**

Also, in many developing countries, even through there are scholarships and systems for tuition loans, the low rate of money being paid back demonstrates the problems these systems face. It is important to improve the management of these systems and ensure that gifted students can effectively make use of them.

Mid-term Objective 4-4: Quality Assurance

Mid-term Objective 4-4: Quality Assurance

In order to improve the quality of higher education, it is important to conduct appropriate evaluation of education and research outcomes.

While on the one hand, the economic situation is gloomy in developing countries, on the other, the number of higher education students continues to increase, and the issue is therefore how, in this severe environment, to maintain the quality of higher education. Especially at newly established private universities and polytechnics and specialty schools, an evaluation system does not function well enough, and these institutions face the problem of declining quality. **In order to raise the quality, an appropriate system for evaluating the quality of education and research at these institutions must be established**. Universities must also fulfill their own responsibilities for

[29] World Bank (1998) points out the difficulty of securing accountability, and the necessity of establishing clear guidelines, introducing an effective way of measuring output, and establishing clear standards for evaluating results.

accountability, and to secure society's trust and support, must appropriately evaluate their education and research activities and their financial situation. Information including the results of these evaluations must be actively presented for the outside world.

Also, in order to provide a fixed standard of higher education, a system for authorizing higher education institutions and an accreditation system based in a public, third party institution need to be created.[30] Through this, higher education institutions will be evaluated and authorized objectively, and the overall quality of the sector can be guaranteed. However, while they secure a guarantee of quality on one hand, there is the danger that accreditation systems will bring about too much uniformity. Also, when these systems are supported thourgh international cooperation, there can be a reaction that the donor country is pushing its own standards upon the recipient country. Thus, it is important that the situation of the recipient country be fully understood and a flexible system constructed whereby the institutions' autonomy and independence are preserved.

JICA's Activities:
There are few examples of JICA cooperation in the area of higher education management, but JICA should implement projects with a focus on this area in the future, and also accumulate knowledge in this area.

JICA's Activities

Improvement of management contributes to the efficient improvement of the quality of higher education.

Thus far, there have been few examples of JICA cooperation in the area of higher education management. However, there are some e higher education projects that involve, as one of the activities, guidance and advice about management and training for administrative staff, advice about the use and maintenance of equipment, and provision of scholarships. For example, in the "The Project on Strengthening Training Capability for Technical Workers in the Hanoi Industrial College," guidance and advice on securing of budgetary and human resources as well as management are taking place. Also, from 2002, in Indonesia, an expert in higher education has been dispatched from Japan as a long-term expert with the goal of appropriate administrative decision-making in higher education and improvement of higher education management. Also, provision of information and advice regarding setting of policies and survey research, guidance and advice concerning institutional management have been taking place.

In order to enable projects to produce sustainable results, it is necessary to establish a management system for the efficient implementation of education and research activities and to strengthen the management ability of those involved. In order to do this as well, from now, **it is important to actively**

[30] In accreditation, there is accreditation for entire higher education institutions and accreditation for specific educational programs at the institutions. At present, accreditation systems are employed in about 20 developing countries, and in many other countries, there are outside evaluation institutions or committees that have been set up for this purpose. In countries like Columbia and Mexico, depending upon the institution, region, goal or program, different evaluation bodies undertake the evaluation (World Bank (2002b)).

implement projects with a focus on improvement of management and work to accumulate knowledge about management.

In terms of assistance for evaluation of higher education, one type of activity is the "African Institute of Capacity Development" in Kenya and "National University of Laos and Lao-Japan Center for Human Resource Cooperation." In these cases, monitoring of the management situation and establishment of an evaluation system have been implemented. There are no examples yet of assistance for establishment and solidifying of accreditation systems. In Japan as well, solidification of a system for evaluating higher education institutions is still at an early stage, so the reality is that there is not enough accumulated know-how in this area in Japan. However, in order to raise the quality standards for higher education, active assistance for the establishment of evaluation standards and an evaluation process, as well as the construction of an evaluation system is important.

Development Objective 4: Improvement of Management

Mid-term Objective 4-1 Establishment of Legal, Institutional and Financial Frameworks

Sub-targets of Mid-term Objectives	Examples of Activities	Case No.	JICA's Main Activities
Construction of a Policy Framework	△Establishment of a higher education policy based on international agreements and goals, the current situation of the country, the content of the country's national development plan, the needs of the people, and trends in other sectors	24	• **Assistance for higher education policy-planning (Dispatch of Long-term Experts)**

Mid-term Objective 4-2 Strengthening the Management Function

Sub-targets of Mid-term Objectives	Examples of Activities	Case No.	JICA's Main Activities
Training of Human Resources in Higher Education Administration	×Human resource development of government administrators		
Improving Management Capacity at Higher Education Institutions	×Improvement of university self-government		• **Assistance for improvement establishment of university education (Technical Cooperation)**
	△Improvement of internal communication through means such as holding regular meetings	11,23	
	△**Establishment of guidelines and plans for implementing activities at the higher education institutions**	9,29	
	×**Securing of accountability**		
	○**Training for office staff to improve office management skills**	1,9,11,13, 20, 23	
	△**Sharing of information via an internal university network (e.g. introduction of an internal management information system)**	23,29	
	○**Implementation and promotion of public relations activities**	9,22,23	
Improvement of Human Resource Management at Higher Education Institutions	○**Securing and placement of the necessary number of teaching staff**	5,9,22	• **Assistance for improvement establishment of university education (Technical Cooperation)**
	△**Establishment of recruitment and allocation methods for teaching staff**	20,22	
Establishment of Materials Management and Equipment Maintenance System at Higher Education Institutions	○**Creation of a system for managing and conserving machinery and laboratories**	5,8,9,20, 23,25	• **Assistance for improvement establishment of university education (Technical Cooperation)**

Mid-term Objective 4-3 Improvement of Finance			
Sub-targets of Mid-term Objectives	**Examples of Activities**	**Case No.**	**JICA's Main Activities**
Diversification of Financial Resources	△Promotion of income-generating activities (e.g. consulting work)	23	
	△Promotion of collaboration with local industry and companies (contracted research, etc.)	23	
	×Securing of access to diverse financial resources		
	×Promotion of private education		
	×Promotion of beneficiaries of the education sharing costs (tuition fees, etc.)		
Improvement of Financial Management	**△Establishment of a mechanism for budgetary allocation**	9,22	
	×Establishment of an auditing function		
Review of Scholarship and Loan Systems	**×Improvement of scholarship and loan systems**		
	×Appropriate selection of scholarship students		
	×Improvement of the loan repayment system		
	×Securing of financial resources for scholarships and loans		

Mid-term Objective 4-4 Quality Assurance			
Sub-targets of Mid-term Objectives	**Examples of Activities**	**Case No.**	**JICA's Main Activities**
Creation of Evaluation System	△Development and improvement of appropriate evaluation and monitoring methods	11,20	
	△Implementation of regular monitoring and evaluation (quality of the education and research programs, relevance, internal efficiency, budget, etc.)	11,29	
	×Introduction of outside evaluation		
	×Appropriate appraisal and training of evaluators		
	×Creation of a feedback system for evaluation results		
Establishment/Improvement of Accreditation Systems	**×Establishment of institutional accreditation**		
	×Establishment of professional accreditation		

Examples of Activities:
◎＝JICA has considerabele experience
○＝JICA has certain experience
△＝JICA has experience as a component of projects
×＝JICA has little experience

Chapter 3 JICA's Cooperation Policy

This chapter presents JICA's basic way of thinking concerning higher education cooperation. In order to designate clearer priority areas for cooperation, more discussion within JICA needs to occur along with more experience implementing projects.

3-1 JICA's Priorities

3-1-1 Principles

JICA has had a long history of cooperation in the higher education field. One would not exaggerate in saying that representative higher education projects such as assistance to institutions such as Jomo Kenyatta University of Agriculture and Technology in Kenya and King Monkut's Institute of Technology in Thailand which began in the 1960s and 1970s truly carved out a historical path along with JICA. These projects succeeded in developing first-rate universities in developing countries and contributed greatly to the provision of human resources necessary for national development. However, with the exclusion of several recent exceptions, many of these JICA projects to establish or expand university departments were not implemented with a conception for the reform of the higher education sector as a whole based on a broad view of higher education in developing countries and the best shape for this sector. Rather, these projects originated with the goals of compensating for a lack of skilled persons in specific technical fields and producing research results concerning specific technological issues. Thus, JICA's higher education cooperation thus far took a somewhat different perspective - perhaps one could say a more partial or limited perspective - towards the higher education field than what was presented in the Development Objectives Chart in Chapter 2.

The Development Objectives Chart in Chapter 2 analyzed the current situation of the higher education sector in developing countries, and tried to bring out various issues and to systematize methods for development in this area. However, if JICA is to continue cooperation in higher education on the same scale in the future, a clearer assistance strategy, in other words, a prioritization of the cooperation areas on the Development Objectives Chart, is necessary. However, in order to prioritize objectives at the mid-term objectives level, first **the higher education Development Objectives Chart and the understanding of higher education that forms its foundation need more internal discussion at JICA. Then JICA needs to get more experiences implementing projects based on the understanding. Through such a process, JICA can clarify priority areas and JICA itself will accumulate "wisdom" in this field.**

Thus, in this chapter we will dare not to clarify JICA's priorities down to the level of mid-term objectives in the Development Objectives Chart, but will

attempt to put out a basic way of thinking concerning higher education cooperation. For more concrete priorities, we look forward to the deepening of debate at JICA and knowledge gained from implemented projects.

3-1-2 Cooperation for Basic Education and Higher Education

If one looks back on trends in educational development in developing countries, one can see a great change from a focus on specialized education and higher education starting in the 1960s to an emphasis on basic education in the 1990s. During this time, the budget for education development was invested more in basic education and higher education stagnated in many countries. Aid from the main donors turned toward the area of basic education and higher education was eclipsed from their priority areas of aid. However, from the latter half of the 1990s, together with the birth of a knowledge society led by the development of information and communication technology, the importance of higher education has been reevaluated.

In this section, when we think of higher education cooperation first we'd like to think about the positioning of higher education within the overall education sector and particularly the relative priority given to basic education or higher education. When we think about this, the following several points should be kept in mind:

- In many situations, given the need to divide up a limited education budget, basic education and higher education are in a relationship where trade-offs will occur.[31]
- Nonetheless, basic education, which should be guaranteed as a basic human right to all persons, and higher education, which builds the foundation for a knowledge society, have different significances and roles, and every society needs both.
- Additionally, basic education and higher education need to complement each other as part of a single pyramid of education development; higher education stands on the wide spread of basic education, and the training of teachers done through higher education and educational research enable basic education to expand.
- Also, if one looks from the perspective of educational finance, public education expenditures for one person (the unit cost) of higher education is far greater than that for basic education. Also from a cost-benefit analysis, a balance between basic education and higher education appropriate to a country's educational developmental stage is necessary.[32]

[31] In developing countries, the higher education share of the overall education budget is generally 15-20%. In countries where the diffusion of basic education is lagging and where the share of the higher education budget is greater than 20%, the fear is high that a fair distribution of the education budget is being lost (for example, Mauritania and Niger). (World Bank (2002b))

[32] The public expenditure for one higher education student, as compared to one primary education student, is 179 times higher in Malawi and 50 times higher in Togo. The average ratio for industrialized countries is closer to 2 to 1.

Considering these points, we would like to make the following proposals with regard to education cooperation in the higher education field.

In countries where development of basic education lags behind, basic education should be given priority.

(1) In Countries where Development of Basic Education Lags Behind, one Should Emphasize Cooperation for Basic Education rather than Higher Education

The spread of basic education is essential for the resolution of development issues generally. In addition, arising from the fact that basic education occupies the bottom of the education pyramid both in terms of volume and quality, in those countries where basic education development still lags behind,[33] one should first put the emphasis on development of basic education.[34] Based on an understanding of the importance of basic education in these countries and because one cannot make these countries increase their higher education budgets, one should avoid large-scale higher education cooperation that requires a large financial burden and consider methods for higher education cooperation with more limited goals and sphere such as teacher training colleges and correspondence education.

One should conduct higher education cooperation that balances the needs of the education sector as a whole.

(2) Pursue Higher Education Cooperation that Achieves Balance in the Education Sector as a Whole

On the other hand, in low-income countries and small-scale countries, too, some type of higher education function is necessary, if one considers that higher education institutions are the source of a society's knowledge and a place for the development of leaders. Also, higher education is necessary for training teachers for basic education and for educational research. Therefore, it is necessary to duly consider the significance of aid to higher education in these countries and to engage in higher education cooperation that balances the needs of the education sector as a whole.

Higher education needs are diverse. It is important to choose the appropriate direction for higher education development based on the country's level of educational development and socio-economic situation.

3-1-3 Higher Education Cooperation Appropriate to Conditions of the Target Country

Basic education, which should be guaranteed to all persons equally as a fundamental human right (mainly primary and lower secondary education), is discussed in terms of the necessity of responding to diverse needs, but actually, no matter what the country or region, basic education has an very unified concept and content. In contrast, higher education's significance and forms of institutions and educational content can show great diversity. The roles

[33] It is difficult to draw a clear line, but we propose a primary enrollment rate of 70%. The average primary school enrollment rate in developing countries is 81.8%, while the average in sub-Saharan Africa is 56.9% (1999/2000).

[34] The Millennium Development Goals (MDGs), which were internationally agreed upon as priority development goals, stated that universal primary education regardless of gender should be provided by 2015. The Japanese government has also expressed its active support for the MDGs and EFA, both international goals emphasizing basic education.

demanded of higher education vary depending on each country's socio-economic situation and range from developing the human resources necessary for development, to securing of educational opportunities for self-realization, to being a base for knowledge in a knowledge society, to contributing to society through the application of accumulated knowledge. Because of this, higher education policies and development strategies are not uniform across countries. For example, Thailand has a higher education enrollment rate of over 20% and Mozambique a rate of 0.5%. Naturally, the type of higher education institutions and development strategy are different. India, a country of 900 million people, and Pacific Island nations which each have populations of only a few hundred thousand have different types of higher education institutions. However, at the same time, in our recent internationally competitive society, the same knowledge is demanded in developing and industrialized countries, and securing a high level of education and research is necessary. Therefore, in terms of higher education cooperation in developing countries, **one must be conscious of the internationalization of higher education, respond to the conditions of higher education development in the country and the overall development level of the education sector as well as the country's needs for human resource development and the country' s own development strategy. Based on each of these things, one will need to select the most appropriate objective for cooperation from the higher education Development Objectives Chart mentioned presented in Chapter 2.**

Points to be considered:
1) From higher education for technical training to more diversified higher education.
2) From the development of higher education institutions to reforms in higher education sector as a whole.
3) In addition to assistance for COE, support for the bottom of higher education, including regional universities, is necessary.

When making this selection, the following three points especially need to be kept in mind.

The first point is that the goals of higher education are diversifying. In JICA's cooperation in the higher education field up until now, a comparatively large number of projects were in the area of developing technologists. However, **along with the diversification of society, mass education has emerged as well as a demand to secure higher education for vulnerable groups in the society and a need to respond to the information society. Thus, demands outside the development of technologists have been made of present-day higher education.**

The second point is that in developing higher education, it is insufficient simply to install facilities or equipment for individual universities or departments or train instructors for those departments. Rather, there is a need to address the structural issues being faced by the higher education field as a whole.[35] For example, by reforming educational finance, including the cost

[35] These kinds of structural issues in the higher education field began to be recognized by the donor community in the latter half of the 1980s. In the past, the World Bank had put efforts into the development of higher education institutions (especially polytechnics). However, based on reflection that development of an individual higher education institution results in the creation of an academic oasis and that sustainability is lacking, the focus of cooperation was shifted to assistance for policy-oriented approaches to the higher education sector as a whole (World Bank (2002b)).

sharing by those receiving the education, one can construct a mechanism for raising funds for educational and research expenses. Also, scholarships and student loans can both secure fairness in educational opportunities and guarantee places for superior students. An evaluation and bonus system can provide incentives to teachers for their research and educational activities. **Without these kinds of reforms in the higher education sector as a whole it will be difficult to develop higher education institutions.** Therefore, one should not just simply provide assistance to develop individual education institutions but also offer cooperation aimed at the reform of the higher education system. Also, one must approach assistance for the development of individual institutions with sufficient understanding of the legal, institutional and financial frameworks supporting the sector as a whole.

The third point is the diversification of the target higher education institutions. In addition to those institutions which occupy the apex of a country's educational pyramid, **institutions targeted for cooperation should be broadened to include regional universities and junior colleges that carry the burden of mass higher education.**

Unfortunately, due to the diversity in higher education development and the limits of JICA's accumulated experiences, discussion at JICA has not yet reached the stage of being able to present a menu of higher education cooperation mechanisms to match different types of target countries. In the future, JICA should work to accumulate this knowledge through pursuing various types of higher education cooperation to meet the needs of different target countries.

Box 3-1 World Bank Categorization of Assistance for Higher Education Based on Type of Target Country

The World Bank's *Constructing Knowledge Societies: New Challenges for Tertiary Education* (2002) presents the World Bank's approach to assisting higher education and areas of focus for different types of target countries. For reference, these are:

Middle-income countries:

- Diversification of higher education institutions and promotion of lifelong education in order to increase enrollment rates
- Raising scientific and technological development capacity in areas agreed upon as the country's development priorities
- Improvement of the relevance and quality of higher education
- Construction of a mechanism to create equity through provision of scholarships and student loans
- Reform of educational finance
- Improvement of higher education administration and management of higher education institutions through introduction of information management system
- Improvement of IT capacity to rectify the digital divide

Transition countries (Eastern Europe, Central Asia):
- Introduction of more flexible educational institutions and curricula
- Improvement of access of students to financial assistance
- Improvement of management of higher education institutions

Low-income countries:
- Development of human resources (training of teachers) and promotion of research for development of t basic education
- Development of technologists and specialists at junior colleges and other non-4-year institutions
- Promotion of graduate education and research activities in fields limited to those where there is a comparative advantage

Small countries:
- Establishment of regional universities through linkages with neighboring countries
- Human resource development extremely limited in field and volume based on the country's economic development needs
- Human resource development using higher education institutions of other countries

To develop higher education institutions, it is necessary to offer technical guidance in specialized fields together with pursuing improvements in the management of the targeted institutions.

3-1-4 From Assistance for Specialty Education to Assistance for Higher Education Management

In JICA's cooperation in the higher education field thus far, there have been many projects to establish or expand university departments or graduate schools. In these projects, the focus of cooperation has been transferring knowledge and skills in education and research to teachers and researchers in specialty fields such as agriculture, engineering and medicine. In order to do this, professors and researchers in specialty fields in Japan were dispatched as technical cooperation experts, university laboratories were outfitted with research equipment, and funds for research expenses were allocated.

However, in the midst of engaging in technical guidance and training in their specialties, what the experts struggled with and what took the most of their time were actually items in the area of management such as securing regular participation of counterpart instructors in the countries, securing of funds to cover research costs, negotiations within the university and with the responsible government agencies or ministries, and building partnerships with industry. Also, if one looks at the successful cooperation projects, it seems that one reason for the success was that the experts went beyond the originally planned activities of the projects and aggressively took on issues in management within and outside the academic institution.[36] Based on these results as well, **it seems that the expansion of higher education in developing countries requires, in addition to technical guidance in specialty fields, the management of higher**

[36] JICA/IFIC (2000) p. 75.

education institutions themselves (for example, execution of securing a budget, management of an incentive system for instructors, creation of the necessary physical facilities for education and research, strengthening relations with industry and the community).

Therefore, JICA's future higher education cooperation will not aim only at transfer of technology in specific specialized areas. Rather, the overall management of education and research at the targeted institutions must be examined, and improvement in management actively pursued.

In order to do this, JICA must, from the project planning stage, include the aspect of management and include management experts among the technical cooperation experts who are dispatched. Together with this, JICA must also accumulate wisdom and experience concerning the management of higher education institutions.

3-2 Points of Concern in Higher Education Cooperation

In higher education development, political power is likely to be at work. Therefore, it is necessary to have strong and consistent commitment of the government, as well as ongoing opportunities for bridging opinions with the various parties with vested interests.

3-2-1 Higher Education Development and Political Interference

In higher education development, political power is at play in many cases - for example, in the invitation to establish a university or the selection of the university president. In the final analysis, there are aspects decided based on political factors. Moreover, in developing countries, higher education reforms such as revision of educational finances to reform scholarships and systems for tuition, establishment and closure of universities, and changes in the framework for entry to universities not only involve politicians, but cause large-scale political issues to develop involving university professors and students-many of which have to be resolved by virtue of a political decision. This is due not only to the fact that higher education institutions themselves stand out in the society, but also to the fact that in many cases higher education opportunities have been exclusively enjoyed by the highest classes in the society which strongly make use of their power to speak up. This political resistance is strongest when trying to reform the structure of the already existing higher education system. Therefore, **in the cooperation for the higher education sector, it is first necessary to have the strong and consistent commitment of the government and, in addition, to take care to have ongoing opportunities for exchanging opinions and bridging those opinions among those with vested interests.**

3-2-2 Globalization and Higher Education

In this era of rapid globalization, developing countries are exposed to the same kind of international competition in various fields as industrialized countries, and their higher education institutions are

The progress of globalization has increased the "brain drain" from developing countries and given rise to new forms of higher education using information and communication technology and led to increased internationalization of higher education institutions. Thus, it is necessary to pursue higher education cooperation based on an international trend.

expected to contribute to the countries' international competitiveness. In addition, globalization is influencing higher education in the following ways:

First, the increasing mobility accompanying globalization has promoted exchange among researchers and instructors necessary to raise the quality of higher education institutions; however, at the same time, it has increased a "brain drain" of human resources from developing countries. The brain drain not only leads to a lack of professors and researchers for higher education institutions in developing countries, but its influence is felt across all sectors. In addition, educational investment in the primary, secondary and higher education levels, for these human resources who have left, cannot be said to be being generating appropriate returns for the country's development, and this exerts further pressure on education financing in developing countries.

The second influence has been brought about with the development of information and communication technology. The rapid spread of computers and the Internet has brought about revolutionary changes in the circulation of information and in one aspect has contributed greatly to raising the quality of higher education institutions. It has made new methods of higher education such as online universities and virtual universities possible and, as a result, higher education, which had been the province of particular countries, cannot now be confined within the framework of control of a particular country. Online universities of international institutions and some private providers as well as franchise universities and off-shore campuses of universities in industrialized countries have started to appear.

The third influence is that as a result of the globalization of people and information, higher education institutions themselves have had to internationalize. For example, issues such as creating common standards of accreditation for higher education institutions across regions and globally, raising the quality of education and research by promoting university networks,[37] and having credits at one higher education institution applicable to others have started to be discussed frequently.

Each of these issues is not one that can be solved through one country's efforts at higher education development; it is necessary that they be debated and addressed through international agreement. For Japan, too, **it is necessary to be involved with higher education development paying heed to the international discussion and the several efforts that have already begun.**

3-2-3 Privatization of Higher Education

In developing countries privatization of higher education is progressing just as in industrialized countries. The proportion of private

[37] Among the international higher education networks are IAU (International Association of Universities) and AAU (Association for African Universities).

Privatization of higher education is progressing. At JICA as well, it is probably necessary to discuss cooperation through private educational institutions.

higher education institutions in a country varies and depends on factors such as the existence of policies for promoting private education, the extent to which conditions and procedures for setting up higher education institutions have been relaxed, the demand for higher education, etc. For example, in the Philippines 80% of higher education students attend private institutions, and the percentage in Indonesia is 60%. Regions where there are many private higher education institutions are Latin America and Asia. Many of these institutions were rapidly established as places to take in students when mass education created new demand for higher education. Therefore, many of the private higher education institutions are not the top universities in a country and there are a large number of small schools. Also, even if we call them "private," the managing parent ranges from private companies purely in pursuit of profit to public benefit corporations, religious organizations and charitable groups.

Private education grows based on market principles and there are many institutions that respond to society's short-term human resource demands. In comparison to public higher education institutions, which did not respond enough to changes in socio-economic needs, private education is more efficient on the point of truly reacting to short-term market needs. One other benefit of private higher education is that it is connected to an alleviation of financing for higher education. There are examples of private education like that in Japan where it is managed by virtue of government subsidies, but in many cases it has lightened the government's education burden and, as a result, contributes to the expansion of higher education.

Up until now, JICA has targeted cooperation mainly to public higher education institutions, but based on the aims of the cooperation - a quick response to mass education and socio-economic needs - **if cooperation through private higher education institutions is more efficient, JICA should discuss private school as potential counterparts in addition to public schools.** In addition, compared to public higher education institutions which are restricted by rigid management structures, there are many private schools which take more flexible and efficient management structures, and this point should be noted.

However, the following two problems must also be borne in mind. The first is a problem with educational quality. Private schools form the bottom of the higher education pyramid, and there are many cases where they cannot offer an adequate level of quality. While a government promotes private education, a system of quality assurance must be constructed. One more problem is that of fairness of educational opportunities. Many private schools are run using the tuition fees paid by the students. Because of this, access is limited to the wealthier social classes.[38] Thus, it is hoped that a policy preserving fairness of

[38] When JICA selects a private school as a counterpart institution, it must confirm beforehand what kind of social classes the institution targets.

educational opportunities through such things as provision of scholarships and students loans should be planned simultaneously.

By introducing the principle of competition among higher education institutions and researchers and instructors, incentives can be drawn out and quality raised.

3-2-4 Introduction of Competition into Higher Education

Higher education is traditionally a static system with little competition. However, recently, the way of thinking has spread that **one should try to raise the quality of higher education through bringing the principle of competition into higher education.** This means allocating budgetary resources in response to results of competition among higher education institutions, among instructors and researchers, and among students, and thereby drawing out one more incentive. In particular, because the quality of instructors and researchers so affects the quality of higher education, one can improve education and research activities by connecting performance to allocation of research funds and improvements of salary and other treatment, or also by increasing the fluidity of instructors and researchers through competition. In JICA's HEDS ("Higher Education Development Study") project in Indonesia, the principle of competition was introduced by having research funds allocated based on a selection from proposals submitted, and there are examples where this has promoted the research activities of participating universities. In JICA's future cooperation, JICA should introduce the principle of competition within and among institutions to secure incentives and raise quality.

In order to secure sustainable development, from an early stage of the project, it is necessary to discuss using outside funds and systems. Also, through arrangements like subcontracts with Japanese universities and other institutions, the building of a direct cooperation relationship between higher education institutions in Japan and other countries can help secure sustainable development. Providing funds to Japanese universities for this is an issue that should be explored.

3-2-5 Securing of Sustainability

In higher education cooperation, the number one problem is securing sustainable development once the cooperation is completed. Particularly with research activities, there are not a small number of cases where, with the cessation of cooperation and the guidance and advice of Japanese university instructors and the allocated funds for research activities and participation in academic societies, the activities become difficult to continue with the country's (or institution's) own budget.

In order to deal with this type of situation, it is necessary at an early stage of the cooperation to discuss a policy for securing a sustainable budget and then to include this policy within the project activities. For example, in the "Higher Education Development Study" project in Indonesia, through things like guidance in the writing of proposals for research activities, capacity of higher education institutions to secure research funds was strengthened and the institutions applied more for the competitive open applications for research funds provided by the Indonesian government (similar to a Japanese scheme of national subsidies for scientific research). Also, regarding study abroad, higher education institutions not only depended on the JICA scheme for "long-term training," but actively used the Japanese Government Scholarship (Monbukagakusho Scholarship) and other countries' scholarship programs. In

this way, **the use of outside funding and systems can be considered an indispensable angle for the securing of autonomous development in international cooperation. Also, relationships with local industry are an important angle for securing sustainable development of higher education institutions in developing countries.**

In addition to these actions, an item that should be discussed in the future as a policy to secure sustainable development after the completion of a cooperation is subcontracting of work with Japanese universities and other institutions. When implementing cooperation through subcontracting, there is the merit that for the higher education institution in the developing country, it becomes easy to continually receive assistance from the particular Japanese higher education institution (university). Also, for the Japanese university, through implementing cooperation by means of a subcontract, they can secure their own income, secure superior foreign students and, furthermore, conclude academic agreements with other schools. It can be considered a way of making possible the strengthening of the university structure. If these kinds of merits become clear both to the recipient country and to Japanese higher education institutions, the continued relationship between the two will continue even after JICA's cooperation ends and can be considered effective as a policy for securing autonomous development. Especially after 2004 when national universities in Japan can become "independent administrative institutions," JICA should actively discuss the use of this kind of subcontracting.

Because domestic resources for higher education cooperation, especially experts in higher education administration and university management, are insufficient, it is necessary to use means such as training to develop Japanese human resources, employing experts from other countries, using a number of short-term experts, compensating for lack of human resources through subcontracting and making use of inter-institutional networks.

3-2-6 Lack of Domestic Resources for Higher Education Cooperation

Among the human resources in Japan who will carry the burden of higher education cooperation are university instructors and researchers, educators, development consultants and employees of the Ministry of Education and higher education institutions. However, there are not enough of these human resources available. For example, in higher education cooperation thus far, university professors have played the central role. However, there were many cases where it was difficult for them to be dispatched to developing countries for long periods, so most of the dispatches were for short periods. Among development consultants from Japan, there are many who have experience with Japanese loan projects but there are not necessarily many who thoroughly understand higher education administration. Administrators and office staff of the Ministry of Education and universities have personal experience with higher education administration and with higher education management. However, few of them understand the special circumstances of developing countries. In particular, for future higher education cooperation, in addition to projects for dispatching Japanese university personnel to assist with education and research activities, projects focusing on administration and management will increase. However, the

present situation is that the number of Japanese experts with knowledge and expertise of higher education administration and university management in developing countries is extremely limited.

Therefore, in developing projects in the higher education field, JICA must pay attention to **the securing of these human resources.** To compensate for the insufficiency of domestic resources, JICA must do things such as **develop Japanese human resources for higher education cooperation through appropriate training,** aggressively **make use of local and third country experts, use short-term experts multiple times** instead of long-term experts, and use **new project implementation methods such as open requests for proposals and subcontracting** as well as **make use of networks of** Japanese, third countries' and regional **higher education institutions.**

It is beneficial if cooperation enables Japan's higher education institutions serving as counterparts for higher education cooperation also to benefit from the cooperation.

3-2-7 Mutually Beneficial Measures of Cooperation for Higher Education Institutions Both in Japan and Developing Countries

Japan's higher education institutions participate as partners in most cases of higher education cooperation. Their major roles up until now were providing advice on higher education management and in specialized fields, and in providing technical cooperation experts and other human resources. However, in the future one can expect more varied types of cooperation such as implementation of projects through JICA subcontracting with Japanese higher education institutions. In higher education development in this era of globalization it is necessary to raise quality by exchanging information and people through networking among higher education institutions, and for this reason as well, it is important for Japanese higher education institutions to participate in the planning of JICA's higher education cooperation.

Many of Japan's higher education institutions, with the goal of improving internationalization and quality and rationalizing management, are working to engage in human resource exchange with foreign higher education institutions, secure superior researchers and students, and develop diverse financial resources. The higher education cooperation implemented by JICA is naturally based on the needs of the developing countries. At the same time, though, it is beneficial to look at the cooperation in light of the present conditions and needs of Japan's higher education institutions and have **cooperation where higher education institutions from developing countries and Japan both feel the merits of reciprocal cooperation**. Furthermore, the fact that JICA's higher education cooperation can contribute to improvement of Japan's higher education institutions can – looking from a longer-term perspective – be thought to be connected to the improvement of JICA projects.

On the other hand, many issues faced by higher education in developing countries are also issues faced by Japan's higher education institutions and there

is an argument that Japan's higher education institutions have a comparative advantage as counterparts for cooperation compared to U.S. or European higher education institutions. Therefore, as JICA pushes on with higher education cooperation in the future, it is necessary first to adequately understand the present situation of higher education in Japan and grasp whether there is comparative advantage, and then plan cooperation based on this. Also, on the occasions when a comparative advantage is unfortunately not recognized, it is necessary to plan a method for compensating through relationships with higher education institutions in other industrialized countries or third countries.

Appendix 1 Major Activity Cases

Japan's development assistance, under the slogan "Developing a country means developing its people," has emphasized human resource development. In the areas of human resource development through higher education and technical education with a direct connection to economic activities and technological development, JICA has a long history of achievement. From the time higher education cooperation began at JICA until recently, the form of cooperation has been mainly limited to assistance for establishing or expanding university departments or graduate schools in given fields. However, since the 1990s, together with the diversification of higher education needs, new forms of cooperation have arisen such as the establishment of inter-university networks.

Establishment and Expansion of Higher Education Institutions

1-1 Establishment and Expansion of Higher Education Institutions (Technical Cooperation Projects/Grant Aid/ Dispatch of Experts) — Cases 1-22

Many of the higher education cooperation projects implemented thus far were aimed at **strengthening higher education institutions in a given specialty field.** In addition to cooperation implemented from the 1970s to expand undergraduate courses, polytechnics and junior college level programs, cooperation for graduate education — Master's and Ph.D.-level programs — began a little bit later in the 1980s. Furthermore, from the latter half of the 1980s, cooperation was begun using formerly targeted higher education institutions as bases for research centers for international level education and research (e.g. The Research Center for Communication and Information Technology (ReCCIT) at King Monkut's Institute of Technology, Ladkrabang (KMITL)). In this way, target institutions and counterparts have recently diversified along with the change of higher education needs.

Traditional forms of Japanese higher education cooperation is assistance to given higher education institutions aimed at improving education in particular specialty fields or to improve research capacity.

One of the main pillars for strengthening higher education institutions is educational activities, including curriculum development and improvement such as assistance for producing textbooks and development of educational materials, guidance for lecturing and for teaching practice, and furnishing the educational environment through construction of facilities and installation of equipment. Also, as a temporary means of cooperation when there are not enough professors to instruct students or to compensate for lack of capacity, in some cases, Japanese experts may teach university students.

One more pillar for strengthening higher education institutions is strengthening the research function, which has as main goals raising the capabilities of university instructors in specialty fields and solidifying the foundations of the institutional research structures. Examples of concrete activities include raising the research capacity of university professors and students through study away at other domestic institutions or abroad and research guidance from Japanese experts, furnishing of laboratories and other "hardware" aspects of the research environment and furnishing of the soft side of the research environment through establishment of research groups and introduction of a research grant scheme.

JICA's projects are implemented to a wide range of institution levels - from polytechnics to graduate schools - but cooperation fields are concentrated in engineering and technology.

If one looks by region, in Southeast Asia there have become many examples of cooperation for graduate level education and research centers, but in the Middle East and African regions where there is a need to develop backbone technologists, there is a relatively large number of projects for cooperation with polytechnics and education courses below the undergraduate level. In Southeast Asia, cooperation is concentrated on university departments and graduate schools especially in the engineering fields, and in other regions engineering, agriculture, medicine and veterinary sciences are included. Also, a recent trend is the implementation of cooperation to university economics departments (e.g. "Development of the Faculty of Economics and Management of National University of Laos and the Lao-Japan Human Resource Cooperation Center"). Furthermore, recently assistance has started for research and practical efforts concerning various community development issues (e.g. Tanzania's Sekoine University of Agriculture Centre for Sustainable Rural Development (SCSRD)), and it can be said that cooperation for higher education more useful to the actual society is being demanded.

Issues:
- Ascertaining labor market demand for human resources is important.
- When aiming to strengthen instructors' research capacity, it is easy for results to be affected by the capacity of project counterparts.
- A perspective that looks at improving university management capacity is essential.

< Issues >

Because cooperation to establish or expand higher education institutions is based on the labor market's needs for human resources in specific fields, only when those who have completed the training obtain a job where they can use the new knowledge and skills they have gained, and demonstrate their ability, can the result of the cooperation be said to be realized. However, in reality the human resource demands of the labor market change and one can see cases where, for a variety of reasons, those who complete a training program do not wish to find a job in the field for which the training was intended. Because of this, in implementing this type of cooperation, **one must adequately grasp the demand situation in the labor market (volume of demand, institutions expected to take in the workers)** when determining the educational course. Furthermore, one must include means for responding to the labor market in the project such as a job placement system and activities for strengthening relationships with industry.

When aiming to strengthen research capacity, there are many cases in which the experts' counterpart is a single person or limited to a small number of people. Also, it takes a number of years for instructors to gain the degrees that will raise their ability. Thus, **it is necessary to be aware of the point that the project's results are significantly influenced by the capacity of the counterparts.**

Also, even if the targeted cooperation is in a specific field, to lay a foundation at the higher education institution, one must not only strengthen the technology side of the targeted field, but the targeted institution's organization must be vitalized and one must be concerned with the management of the university as a whole, including departments outside the area of cooperation. In cooperation thus far, one can raise as an issue the fact that **enough attention has not been paid to improvement of management** and not many experts specializing in university management have been dispatched in the past.

Other than this, for factors restricting the Japanese side, one can mention that there are few experts dispatched for the long-term. However, efforts have been made to address this issue by doing things such as strengthening its domestic support system, expanding private companies and other alternatives as sources of personnel for dispatch, making regular use of short-term experts and supporting networks of higher education institutions in Japan and developing countries.

Box A1-1 Thailand: King Monkut's Institute of Technology, Lakrabang (KMITL), Research Center for Communication and Information Technology (ReCCIT) (October 1997-September 2002)

King Monkut's Institute of Technology, Lakrabang (KMITL) is located in Lakrabang (approximately 30 kilometers east of the center of Bangkok), and is a university with seven faculties: engineering, architecture, agricultural technology, science, industrial education, agricultural industry, and information technology. Since a technical cooperation agreement (August 1960-August 1965) was reached between the Japanese and Thai governments in 1960 to establish a telecommunications training center in Thailand, Japan has continued the cooperation over the course of 40 years. During this time, the telecommunications training center became a three-year specialty junior college in 1964, and then in 1971 joined together with two other colleges and rose to the ranks of a five-year school now named King Monkut's Institute of Technology. Part of the school moved to the Lakrabang campus, and architecture, industrial education/science, and agricultural technology departments were established. On the Japanese side, Tokai University (1977), Tokyo Institute of Technology (1992) and The University of Electro-Communications (1997) concluded academic exchange agreements with the school, and also assisted with such things as the expansion of the university, human resource development and research promotion as part of second phase (December 1978-August 1983) and third phase (April 1988-March 1993) "Project-type Technical Cooperation" projects. Also, a Japanese corporation funded scholarship system was established (1971), as well as practical factory-based training (1977), a construction scholarship system (1989), etc. Thus, actual cooperation activities involving linkages with industry as well as things like the start of an invitation program to the Institute for Posts and Telecommunications Policy, a human resource exchange with a public institution, were also promoted. Furthermore, through the "Partners Project" (1992), making use of a satellite launched by Japan, joint experiments in applied technology (areas such as distance medicine, distance education, computer

networking, satellite broadcast, and joint development of a human resource training system using distance education, as well as the implementation of a continuation project called the "Post- Partners Project" (1996).

Besides this, as a way of making use of the developed skills and facilities for the benefit of other developing countries, JICA has been active in supporting KMITL in organizing "third-country training" in information technology (started in 1978 and presently known as JTTP, the Japan-Thai Partnership Program, and having completed 11 programs with 13 courses established), dispatched KMITL professors to the engineering department of National University of Laos in neighboring Laos, and supported KMITL's acceptance of research students from universities in Laos.

The KMITL Research Center for Communication and Information Technology (ReCCIT) project is the fourth "project-type technical cooperation" project implemented at KMITL, and has as its goals strengthening the center's research and development capacity and the graduate school program. The implementing partner organizations are the Ministry of University Affairs and KMITL, and on the Japan side a Japan-based advisory committee (Ministry of Public Management, Home Affairs, Posts and Telecommunications; Tokyo Institute of Technology; Tokai University) has been established. Through dispatch of experts in information technology, technical training of overseas participants, provision of research and educational equipment, the goals of the project are being pursued. These are: 1) establishment of an information technology research center; and 2) strengthening of graduate school programs in the field of information technology at the Center and other research labs that are the targets of the cooperation.

At present, KMITL has become evaluated as one of the highest level industrial universities in Thailand. One may conclude that this is because of: 1) Japan's long-term and ongoing assistance; 2) comprehensive assistance to the university, industry and each level of government; 3) the significant influence of graduates of study abroad programs in Japan who had been sent for study in Japan at an early stage of the project. In the future, one can expected continued development through KMITL's participation in the Southeast Asia Engineering Education Network (SEED-NET) and strengthening of linkages with other higher education institutions.

Box A1-2 Project for Expansion of Biotechnology Department in Putra University in Malaysia (June 1990 - June 1995)

In the 1980s, Malaysia put effort into harvesting primary agricultural products such as rubber and palm oil in high volume and at a high level of quality, and developing a food processing industry. On the other hand, the enrichment and outfitting of higher education institutions for the development of biotechnology skills and for securing engineers to support the chemical industry became an urgent issue. Given this context, the Malaysian government requested cooperation to enrich and outfit the biotechnology department of Universiti Putra Malaysia (at the time of the start of the project, Malaysia Agricultural University), which has been established in 1986, and for human resource development. For the five years from 1990-1995, this project was implemented. The implementing partner institution in Malaysia was Universiti Putra Malaysia and on the Japan side, the Ministry of Education and Okayama University became the cooperating institutions. A Japan-based committee to support the project was also established. The project goal was established as "Enriching and outfitting the biotechnology department at Universiti Putra Malaysia and human resource development," and the following activities were implemented:

1) Guidance and advice about each type of research and experimentation method in four priority fields (organizational development, enzyme/fermentation engineering, molecular biology/genetic engineering, biological reaction processes)

2) Outfitting of research equipment and guidance and advice concerning maintenance management systems

3) Research guidance and advice to help university staff obtain higher degrees

Through these activities, the capabilities of the research and education staff of the biotechnology department increased markedly, the number of research papers increased significantly, workshops and seminars

for human resource development in neighboring countries were organized, etc., and active research and educational activities developed.

One of the big successes of this project was that research results were connected to promoting collaborations with industry. One of the research activities in the project dealt with issues concerning palm oil, Malaysia's number one industry, and the possibility of using this research in the food processing field gained the attention of private companies. When joint work with industry became possible at the university in 1995, as the result of amendment of the University and University Colleges Act and the incorporation of the university, the university secured funding from the government's system of research subsidies, and used the research results from the technical cooperation with Japan as a base to start joint research with private companies aiming to apply the research. The Malaysian government had emphasized the development of industry through public-private cooperation, and has great expectations for the research and development contributions of Universiti Putra Malaysia in the important palm oil industry.

Box A1-3 Bangladesh Institute of Postgraduate Studies in Agriculture (ISPA) (July 1985-July 1995)

This project is a technical cooperation project with the Institute of Postgraduate Studies in Agriculture (ISPA) which was established in 1983 by use of facilities constructed through grant aid from Japan. Through strengthening graduate level education and research, the project had the goal of contributing to the improvement of the country's practical agricultural research and technology. The project was implemented over two phases from 1985-1995. (Following that, "Aftercare Cooperation" was conducted from April 1999 to March 2001)

The implementing partners in Bangladesh were the Ministry of Agriculture and the Ministry of Planning. On the Japan side, during the first phase, the partners were Kyushu University and Saga University, and in the second phase six universities conducted the assistance, with Kyushu University as the coordinating partner. Cooperation was extended for the implementation of the three plans below – a research plan, an educational plan, and a dissemination plan.

1) Research plan: Implementation of practical research and experiments in nine areas

2) Education plan: Improvement of educational methods, curriculum preparation, creation of education materials and implementation of lectures

3) Dissemination plan: Training and technical advice and guidance as well as organizing of seminars for agricultural researchers, outreach workers, farmers and students

During the project, 401 research papers were published, and an extremely large number of research presentations took place. 18% of research papers were published in international journals.

The project's greatest achievements were the introduction, for the first time in the history of Bangladesh, of an agriculture higher education curriculum based on units on different topics and the establishment of an IPSA Act (1994) that guaranteed the continuation of the right to award graduate degrees to an autonomous research institute. Through this, in 1995 a degree-awarding ceremony was held and IPSA achieved a certain level of independent development as a Center of Excellence in the fields of agricultural education and agricultural research.

Following the implementation of the project, and based on the proposal of the Prime Minister of Bangladesh, who recognized the development of the graduate school, in 1998 the school became a full-fledged university. At that time, ISPA was changed from a graduate school under the Ministry of Agriculture to the Agriculture University under the Ministry of Education, and the organization of the university was further strengthened.

Strengthening of Higher Education Management Capacity

1-2 Strengthening of Higher Education Management Capacity (Technical Cooperation Projects/ Individual Expert Dispatch) – Cases 23-24

As higher education institutions expand and become more complex, a professional management system becomes necessary to meet these new needs. As the scale and scope of universities expand and their social significance grows, and as fees for university education rise, voices calling for accountability of educational results get louder and demands are made for management that is more efficient and highly transparent.

- Few projects have a clear main goal of strengthening university management capacity.
- However, the actual situation is that in the process of implementation, there is understanding that strengthening university management capacity is essential, and some type of appropriate activity is included.

As an example of a project aimed at raising the quality of university education through improvement of management capacity, the "Higher Education Development Study (HEDS) project is introduced in Box A1-4. However, among the many JICA projects to establish or expand higher education institutions, there are few examples that clearly include activities targeting the management staff of higher education institutions with activities aimed at strengthening management. Nonetheless, at the stage when cooperation is actually taking place, **building the administrative capacity of higher education institutions and making management more efficient** are naturally understood as issues that need to be addressed. Especially when cooperating to establish a new higher education institution, cooperation for university management naturally needs to be included at the same time. For example, in the Jomo Kenyatta University of Agriculture and Technology project, the goal was to establish a technological foundation for the Faculties of Agriculture and Engineering, but in order to achieve this, it was necessary to be concerned with the overall management of the university, including departments outside the one targeted, and it was reported that this would be deeply connected to the project's success or failure.

Issue:
- Lack of accumulated experience in Japan

< Issue >

This area has the limiting factor that, at present, reform is underway in Japanese higher education institutions as well, and **Japan does not have enough experience in this area and has an insufficient number of experts in university management.**

Box A1-4 Higher Education Development Study (HEDS) in Indonesia (April 1990 - July 2002)

Indonesia's Higher Education Development Study (HEDS) project is a joint Japan-U.S. project implemented in the Sumatra and Kalimantan regions to assist with the improvement of the quality and university management of 11 targeted universities, with the aim of raising the level of standards for regional higher education. For five years starting in 1990, technical cooperation was implemented, and following a one-year extension from April 1995, from August 1996-July 1997, the project was re-extended based on a request from the Indonesian government. Furthermore, follow-up cooperation was conducted for three years starting in August 1999.

The implementing partners in Indonesia were the Directorate General of Higher Education, Ministry of Education and Culture and Bandung Institute of Technology as well as the target universities for the cooperation, and the goal of the project was set as "aiming to improve the quality of the engineering faculties and of management at the target universities." The main project activities were study exchanges for the teaching staff at top universities in the country and assistance for them in obtaining advanced degrees, implementation of different types of seminars and short courses by professors from Japanese universities (education techniques, university management), training in Japan for instructors and managers from the target universities, and provision of research equipment and technical books. Outside of the technical cooperation, other official development schemes were used, including general grant aid, provision of equipment, and yen loans (for scholarships for exchange study at other universities in Indonesia). In January 1990, to support the project from the Japan side, a domestic advisory committee was established and included representatives of National Graduate Institute for Policy Studies, Tokyo Institute of Technology, Toyohashi University of Technology, and Nagaoka University of Technology.

In 2002, an evaluation was conducted after the follow-up period and the points below were noted:

1) Points such as priority cooperation for higher education and engineering education, "follow-up assistance" following the Asian financial crisis and the period of that assistance, and the policy for promoting decentralization through support of regional universities were appropriate.

2) Three effective points were: 1) improvement of the quality of education (improvement of teachers' capabilities, increase in those holding Master's degrees and doctorates, outfitting of a core library, development of texts in local languages); 2) improvement in the capacity of targeted universities (improvement in universities' management capacities); and 3) vitalization of research activities (increase in number of research projects, building of domestic and international academic networks).

3) Efficient activities were implemented in six areas: 1) strengthening the capabilities of instructors (through program for obtaining advanced degrees, Ministry of Education Scholarships, short-term seminars, short-term training in Japan, etc.); 2) use of the core laboratory (lab preparation, possibility of self-sustaining management); 3) strengthening of research activities (number of applications for research implementation and increase in research funds, increase in research contracts from private companies); 4) improvement in department management (use of the Internet, increase in number of personal computers, holding of meetings among university presidents, heads of departments, and the project working group); 5) development of textbooks (publishing, introduction of a recycling system); and 6) building of a human network (organizing a core laboratory conference, holding of seminars for presentation of research, building of regional academic networks).

4) There were impacts such as: 1) influence on manufacturing on the islands of both Sumatra and Kalimantan (high evaluation of graduates); 2) influence on engineering education (development of universities outside of those targeted); 3) research subcontracting by private companies (increase in research subcontracting).

5) Concerning policy, organizational function, ability to obtain a budget, and use of information technology, continuity of the effects can be expected.

Based on the above evaluation, the technical cooperation spanning 12 years was completed in July 2002, and collaboration with the Southeast Asia Engineering Education Network (SEED-NET) is being discussed.

Building Networks of Higher Education Institutions

1-3 Building Networks of Higher Education Institutions (Technical Cooperation projects/ Third-country Training) — Cases 25-29

In the background to this form of cooperation are such things **as the increased need for greater efficiency due to the limited financial resources**

of the higher education sector, achievement of greater equity through sharing of information and resources among universities, increased need for improvements in quality, and increased need for access to diverse forms of education making use of information technology.

- Projects aim to provide diverse higher education opportunities, raise efficiency and secure quality.
- In-country and regional networks are established.
- Contributions are made to the community.

In higher education networking projects implemented thus far, there are ones that establish domestic networks, ones that establish regional networks across several countries, and ones that promote relationships between two or more developing countries.

As an example of a project establishing a domestic network, there is Malaysia's "Project on Networked Multimedia Education System" (refer to Box A1-5). In this project, Multimedia University is used a hub site, and a network is constructed with five regional higher education institutions using distance education. The goal of this project is **to achieve greater equity among the regions.**

As an example of the promotion of networking across a region, outside the frame of a single country, there is Thailand's "Southeast Asia Engineering Education Network (SEED-NET)" project (refer to Box A1-6). The higher education institutions that participate in this network basically are on an equal footing, and the goal is **to raise the quality of education in the region through mutual assistance among the participants.**

As an example of South-South cooperation in networking of higher education institutions, Thailand's King Monkut's Institute of Technology, Lakrabang (KMITL) is used to develop human resources for Laos. KMITL university professors are dispatched to Laos, and assistance is given to instructors from Laos to obtain degrees at KMITL (the "Project for Fostering the Academic Exchange and Cooperation for Teachers of the Faculty of Electronics and Architecture, National University of Laos"). Also, Jomo Kenyatta University of Agriculture and Technology in Kenya is used as a base for cooperation in a project aimed at developing African human resources (refer to Box A1-7). These projects all made use of higher education institutions where Japan has had long-term cooperation arrangements and aim to make use of the cooperation more widely within country and across neighboring countries. From the perspective of efficiency of aid, this is a pattern that should be pursued more in the future.

Box A1-5 Project on Networked Multimedia Education System in Malaysia (July 2001 - June 2005)

In Malaysia, the 7th Malaysia Plan, called for planning for national level promotion of information technology including a Multimedia Super Corridor (MSC). However, it was recognized that for the promotion of this plan, it was urgent to correct the problems of an insufficient number of technologists and regional disparities. Taking this into account, a project was developed to establish a multimedia network education system using Multimedia University (MMU), established in 1997, as a hub site with remote sites located at five regional education institutions. The plan began in July 2001 for a four-year period.

The project site was Cyberjaya (the south part of the city of Kuala Lumpur), and the implementing partner institutions were the Ministry of Energy, Communications and Multimedia and MMU. On the Japan side, the Ministry of Education and the Ministry of Public Management, Home Affairs, Posts and Telecommunications were the cooperating agencies and established a Japan-based advisory committee in April 2002 (Toyohashi University of Technology; Nagoya Institute of Technology; the Ministry of Public Management, Home Affairs, Posts and Telecommunications, etc.). The goal of the project was "establishment of a multimedia network education system at MMU and at the remote sites," and there was an aim for the multimedia network education system to be used in the future for expanding the engineering, IT and the multimedia fields within and outside Malaysia.

In the project, activities were implemented in four areas: installing sending and receiving equipment at MMU and the remote sites and making the equipment operational, providing education to distance education instructors and facilities operation technicians, establishing a detailed program of distance education (curriculum, units, level, evaluation method, etc.), and developing useful multimedia education materials.

Through this, good results are expected on the following three points: 1) distance education's smooth technical operation (construction of the system for sending and receiving communications, effective management of training by instructors and staff, implementation of regular maintenance by technicians); 2) management of distance education based on a curriculum; 3) effective implementation of distance education making use of multimedia educational materials. These successes will be evaluated by means of indicators such as manuals concerning distance education management, operation and teaching methods; the number of classes; the number of hours classes are held; the number of students; the completion rate of students taking courses; comparison of grades with ordinary, face-to-face teaching; student satisfaction and employment rate of those completing courses.

Box A1-6 Southeast Asia Engineering Education Development Network (SEED-NET) (March 2002-2007)

The basic idea for this project traces back to then-Japanese Prime Minister Hashimoto's "Hashimoto Initiative" at the time of the Asian financial crisis in 1997. The idea was that in order for ASEAN countries to overcome the Asian economic crisis, cooperation was needed for strengthening the science, engineering and technology fields. The initiative was aimed at improving the education and research capacity at engineering higher education institutions in the ASEAN region, and supported the establishment of SEED-NET, a network linking 19 universities in 10 ASEAN countries and, through this network, collaborative activities were implemented, including a program to develop young instructors through their obtaining of advanced degrees, a research support program, a program to improve education courses, organization and sharing of academic and researcher information, and collaboration with industry. In connection with these activities, JICA cooperated with the Japanese Ministry of Education and supported the collaborative activities of eleven Japanese universities. The project goal was given as "establishing a network for the development of human resources in the region and, though collaboration with Japanese universities, improving the education and research capacity of participating universities" and the following activities were implemented:

1) Assistance for study abroad within the region: Dispatch and acceptance of foreign students from member universities in the region was implemented, and efforts were made for effective development of human resources (obtaining of Master's degrees), and for strengthening collaboration among universities
2) Assistance for research: Research grants, and assistance for participating in or organizing conferences, seminars, or workshops
3) Dispatch of short-term experts: Experts dispatched from Japan to host universities, held lectures and provided advice and thereby helped to improve the curriculum for the regional foreign exchange program
4) Short-term technical training of overseas participants: Implementation of short-term training at Japanese universities
5) Long-term technical training of overseas participants (study abroad to obtain Ph.D.): Through young instructors at member universities obtaining their Ph.D.s, the level of the instructors could be raised.

Through these activities, the results expected are: 1) instructors at participating universities in the ASEAN region will participate in the program to obtain their Ph.D.s (at the end of the project, 68% of instructors at the participating universities will hold high-level degrees); 2) the participating universities and graduate schools will grow in their capacity to develop researchers and will graduate high-quality researchers (at the end of the project, 800 university instructors (15% of the total) will gain the newest knowledge in their specialty and implement university education matching the needs of their region 3) joint research, seminars, development of educational materials, and academic presentations will increase (at the end of the project, 2000 university instructors (37% of the total) will participate in a research seminar.

Box A1-7 Kenya: Jomo Kenyatta University of Agriculture and Technology (August 2000 - July 2002)

The "African Institute of Capacity Development" project is a priority cooperation project making use of Jomo Kenyatta University of Agriculture and Technology, which JICA has equipped the foundation of over the course of more than 20 years of cooperation, as a base for capacity development in Africa. The implementing partner agencies in Kenya are the Ministry of Education, Science and Technology and Jomo Kenyatta University of Agriculture and Technology. On the Japan side, the support structure includes Nagoya University, Toyohashi University of Technology, Kyoto University and Hitotsubashi University. The goal of the project is "to prepare for the actual operations of the African Institute of Capacity Development through its three functions: joint research, dissemination of research and information networks," and in the future, the aim is to promote human resource development for poverty alleviation and socio-economic development in Africa. The main cooperation activities are as follows:

(1) Establish the "African Institute of Capacity Development" at Jomo Kenyatta University of Agriculture and Technology
(2) In the areas of joint research, dissemination of research, and information networks, implement the following activities:
  1) Implementation of a needs assessment (implementation through workshops, seminars, the Joint Working Committee, etc.)
  2) Making a plan for each project implementation area
  3) Implementation of the project (including guidance and participation in joint research)
  4) Monitoring and evaluation of project results

These activities will be implemented through a grouping of different cooperation formats, including short- and long-term dispatch of technical cooperation experts, technical training of overseas participants, provision of equipment related to information, third-country training, domestic (local) training, grant aid and poverty alleviation projects.

Scholarships Programs for Foreign Students

Contributing to capacity building of government administrators and development of leaders

1-4 Long-term Training, Grant Aid for Human Resource Development Scholarship (Technical Training/Grant Aid) — Cases 30-32

In addition to the Japanese Government Scholarship (Monbukagakusho Scholarship) programs, JICA has three programs which support the study of foreign students: Long-term Training, Grant Aid for Human Resource Development Scholarship and Support for Japanese Emigrants and Ethnic Japanese. The Long-term Training scheme targets mainly JICA project counterparts and government officials. The scheme was begun in 1999, and involves a standard two-year study period when the trainees can obtain a Master's Degree or Ph.D.

Grant aid for human resource development scholarship assists students selected through open application in fields of human resource development agreed upon with partner countries. Students are assisted in gaining undergraduate or Master's degrees. Thus far, in such fields as economics, management, public administration and educational administration, aid has been given to students from China, Bangladesh, Myanmar, etc. In these countries, **mainly government officials in the given fields are targeted with the aim of building capacity of government agencies.**

The program for supporting Japanese emigrants and ethnic Japanese targets 12 countries in Latin America and has as its goal **developing leaders of Japanese ancestry in those societies.**

Box A1-8 Malaysia: "Look East Policy"

The "Look East Policy" is the human resource development policy of Malaysia expressed in 1981 by then-Prime Minister Mahathir. It had the goal of learning from Japan's development experiences and work ethic as well as management philosophy and was begun in 1982. This was a joint project between Japan and Malaysia; the Malaysian government, Japan's Ministry of Foreign Affairs, Japan's Ministry of Education, JICA, JBIC, the Japan Foundation, etc. collaborated in order to implement the project. The program of activities included things like assistance for study abroad at universities and specialty schools and assistance to develop Malaysian teachers of Japanese and others through a study abroad program, as well as training programs such as those in industrial technology and office work. On the other hand, in order for the project to be implemented smoothly, the Japanese government offered other types of cooperation such as the dispatch of teachers in Japanese and other subjects. Also, Japan paid for a portion of the necessary program expenses. At present, the project is continuing through the use of yen loans.

Annex Table: List of Relevant Projects in Higher Education

No	Country	Project Name	Period	Type of Schemes	Mid-term Objective	Characteristics
1-1 Establishment and Expansion of Higher Education Institutions						
1	Indonesia	Strengthening of Polytechnic Education in Electric-related Technology	1999.10-2004.09	Technical Cooperation project	1-1 1-2 4-2 3-2	Implemented activities were: 1) Train instructors in the four areas of electronic engineering, electric engineering, communications engineering and information engineering; 2) With the goal of training mid-level technologists in the information engineering field, dispatch experts to assist with curriculum development and creation of educational materials, installation of equipment for experiments, and implement training in Japan for instructors of Electronics Engineering Polytechnic of Surabaya (EEPIS)
2	Indonesia	Joint Study Project on the Center for Japanese Studies of the University of Indonesia	2001.1-2004.1	Technical Cooperation project	2-1 2-2	In order to establish a Japanese studies center, three research groups were formed around the themes: 1) Economic development and its social foundation; 2) Political systems and international relations; and 3) Urbanization and social life. The following activities were implemented: development of a plan for research activities and training of researchers, research guidance and advice, seminars for outsiders, training for office workers, equipping of a library, etc.
3	Indonesia	The Project for Expansion of Electronic Engineering Polytechnic Institute of Surabaya	2002-2004	Grant Aid	1-1 1-2	Together with the establishment of a teacher training course in the electric engineering field, the Institute was equipped with facilities and educational materials in order to: 1) train teachers in the four areas of electronic engineering, electric engineering, communications engineering and information engineering; 2) develop mid-level technicians in the information engineering field.
4	Malaysia	Higher Education (Science/ Mathematics)	2000.9-2003.3	Dispatch of Long-term Experts	1-2	As a key part of a “twinning” program for foreign students in Japan, at the Mara Education Foundation’s Pangi College guidance in science and mathematics education was given (guidance in methods of teaching mathematics, guidance in creating syllabi).
5	Philippines	The Project for Upgrading Human Resource Development for Air Navigation Systems Specialist at the Civil Aviation Training Center Manila	1997.10-2002.9	Technical Cooperation project	1-2 4-2	The goal of this project was the technical training of air traffic controllers in the Philippines in order to support appropriate management and sustainability of aviation security facilities. Implemented activities were development and revision of a specialty course curriculum at these facilities, planning and implementation of a high-quality teacher training program, creation of a teacher instruction manual, introduction of new technical information, organization of seminars, establishment of a training cycle, implementation of an on-the-job training program, and training of staff to maintain training equipment and related facilities and development of a database.
6	Thailand	Project to Enhance the Capacity of the Faculty of Engineering at Thammasat University in the Kingdom of Thailand	1994.4-2001.3	Technical Cooperation project	1-2 2-1 2-2	A technical cooperation project supporting educational equipment and teacher training at the newly established engineering department of Thammasat University and aimed at development of human resources in science and technology. Main activities were: 1) Improvement of teaching capacity of instructors (curriculum development, improvement of lecture content and methods, improvement in guidance for experiments and research, improvement of textbooks and guidebooks for experiments; 2) improvement of research capacity of instructors (content, methods, presentations); and 3) guidance concerning department management issues.

No	Country	Project Name	Period	Type of Schemes	Mid-term Objective	Characteristics
7	Thailand	The Research Center for Communication and Information Technology (ReCCIT), King Mongkut's Institute of Technology, Ladkrabang, (KMITL), The Kingdom of Thailand	1997.10-2002.9	Technical Cooperation project	2-1 2-2 3-2	The goal of this project was to develop high level human resources for Thailand's information technology industry, and it focused on strengthening the research capacity at the center and the graduate school program. Activities implemented were dispatch of technical cooperation experts in information technology, technical training of overseas participants, and provision of equipment for research and education in the information technology field. In 2002, 42 years of support to KMITL, including three technical cooperation projects and two grant aid projects, were completed.
8	Viet Nam	The Education and Research Capability Building Project of Hanoi Agricultural University	1998.9-2002.8	Technical Cooperation project	1-2 2-1 4-2	Viet Nam had had an urgent need for development and management of agricultural policy for a market economy, research and developmenbt concerning technology necessary for modern agriculture and development of human resources who could guide farmers, and this project was implemented with the goal of improving the quality of education and research of three departments at Hanoi Agricultural University (agriculture, land and water resources, agro-economics), which served as the nucleus for agricultural higher education. In the three targeted departments, activities implemented included: 1) Assistance for research activities, organizing of workshops and seminars; 2) Advice to instructors on development of educational materials and curriculum; 3) Strengthening of the management system of the central laboratory and guidance concerning equipment management systems.
9	Viet Nam	The Project for Strengthening Training Capability for Technical Workers in the Hanoi Industrial College	2000.4-2005.3	Technical Cooperation project	1-1 1-2 3-1 4-2	This cooperation was planned in order to improve the training capacity of the Hanoi Industrial College, which served as a base for training technicians in mechanical fields. Implemented activities include: 1) Analysis of the current situation of the mechanical engineering field and development of training content; 2) establishment of regulations concerning entrance qualifications and requirements, publicity and selection of students; 3) technical transfer to instructors (curriculum development methods, field-specific specialty knowledge, educational materials development methods, etc.; 4) vocational training course curriculum and educational materials development, course implementation and evaluation; 5) procurement, maintenance and management of machine parts, equipment and facilities; and 6) securing of a budget and personnel, and advice on independent management.
10	Viet Nam	Project on the Improvement of Higher Maritime Education in Viet Nam	2001.10-2004.9	Technical Cooperation project	1-2	This technical cooperation project was implemented to enable Viet Nam Maritime University to be able to turn out maritime personnel meeting international standards. Project activities included: 1) Improvement of curriculum in the navigation and marine engineering faculties; 2) Introduction of an educational training curriculum in both faculties making use of new technology; 3) Improvement of curriculum for a retraining course for maritime personnel; 4) Promotion of maritime research; and 5) Expansion of exchange with maritime universities in other countries.

No	Country	Project Name	Period	Type of Schemes	Mid-term Objective	Characteristics
11	Laos	Development of the Faculty of Economics and Management of National University of Laos and the Lao-Japan Human Resource Cooperation Center	2000.5-2001.9, 2000.9-2005.8	Grant Aid, Technical Cooperation project	1-1 1-2 2-1 4-2 4-4	This cooperation was implemented to 1) develop human resources through the Faculty of Economics and Management at National University of Laos; and 2) through the Lao-Japan Human Resource Cooperation Center, to improve mutual understanding between Laos and Japan. Concerning 1), activities implemented were assistance for developing the teaching capability of instructors, assistance for research, improvement of curriculum and educational materials, and consolidation of monitoring and evaluation mechanisms for the department's management system and management situation. Concerning 2), implemented activities were development of educational materials for a business course and Japanese course, implementation of these courses and various types of exchange programs and information services.
12	China	The Clinical Medical Education Project for the China-Japan Medical Education Center	1995.4-2000.4	Technical Cooperation project	1-2 2-1 2-2	This project was implemented as an extension of a 1989 cooperation project which had goals of improving the China-Japan Medical Education Center's Japanese language-based development of human resources in the medical education field and improving medical education. This project's goal was to produce clinical doctors using the center's Japanese-based clinical medical education as a base. The main activities implemented included improvement of clinical practice for the center's 6th-year students in the Japanese course; establishment of a clinical training system for the center's residents; lectures, practical guidance and introduction of equipment to assist with technical transfer concerning new treatments; and improving capabilities for clinical research.
13	Sri Lanka	Dental Education Project at University of Peradeniya in Sri Lanka	1998.2-2003.1	Technical Cooperation project	1-2 4-2	Through improvements in the education system of the University of Peradeniya, of which the dental education building and associated hospital which where newly constructed through Japan's grant aid program, the project aims to developmental personnel of sufficient quality and quantity and improve dental hygiene services. Activities implemented include: 1) strengthening of organizational function to implement training; 2) training to improve the technical ability of technical and nursing staff; 3) training to improve management capacity in the dental department; and 4) implementation of post-graduate education.
14	Sri Lanka	The Project for Improvement of Educational Equipment of the Faculty of Engineering, University of Moratuwa	2001.9-2001.10	Grant Aid	1-2	In order to address the declining equipment of the University of Moratuwa and the problem of insufficient equipment meeting modern engineering standards, educational equipment for each department as well as joint equipment (audio-visual education system, etc.) were provided.
15	Sri Lanka	Project for Human Resource Development in Information Technology through Capacity Building of University of Colombo School of Computing	2002.6-2005.5	Technical Cooperation project	1-1, 1-2	This was a project to implement effective and efficient IT training that matched needs at the University of Columbo School of Computing (established through a project beginning in 1987). It aimed to improve Sri Lanka's IT capacity through such things as 1) strengthening the organizational function for implementing training; 2) IT-related technology transfer; 3) implementation of training using IT; and 4) strengthening research and development capacity concerning Web-based training.

No	Country	Project Name	Period	Type of Schemes	Mid-term Objective	Characteristics
16	El Salvador	Nursing Education Strengthening	2002-2006 (5 years, 1 month)	Third-Country Training	1-2	The aims of this cooperation project for strengthening human resources in nursing included improving the education for nursing teachers and the environment for nursing education, as well as fostering independent initiative. At the El Salvador Nursing Research and Training Center, activities implemented included training to teach a foundation of audio-visual knowledge and techniques for creating and using audio-visual materials. It also aimed to build the capacity of the trainees from the Central American region and the instructors at the center.
17	Argentina	The Aftercare Technical Cooperation for the Research Project at The Faculty of Veterinary Science, The National University of La Plata in Argentina	2001.4-2003.3	Technical Cooperation project	2-1	This aftercare cooperation, while aiming to sustain diagnostic techniques at the Faculty of Veterinary Science that were developed through previous JICA projects and Third-country Training, is aimed at strengthening the clinical department and promoting field applications, as well as consolidating a base for south-south cooperation. Cooperation implemented includes: 1) improvement of clinical diagnostic techniques; and 2) application of diagnostic techniques to prevention and treatment at veterinary hospitals. Outside of this project, this faculty has participated in receiving an individual technical cooperation expert and in Third-country Training.
18	Brazil	The Clinical Research Project of State University of Campinas in Brazil	1997.4-2002.3	Technical Cooperation project	2-1 2-2 3-1	In order to raise capacity for diagnosis, treatment and research on 1) HIV/AIDS and 2) liver diseases, this project involved implementation of development of diagnostic methods for both departments and technical transfer of examination, detection, measurement and treatment methods and aimed to reduce the number of patient deaths in both departments.
19	Saudi Arabia	The Project on Improvement of the Technical Education of Electronics in the College of Technology in Riyadh	1997.4-2001.3	Technical Cooperation project	1-2	With the aim of improving electronics engineer education at this college and developing technologists with wide-ranging knowledge and skills to support the country in the future, this project involved implementation of guidance and advice for things like curriculum and creation of educational materials for four courses: industrial electronics and control technology, computer technology and communication technology.
20	Kenya	Institute of Surveying and Mapping	1994.10-1999.9	Technical Cooperation project	1-1 1-2 4-2 4-4	This project involved cooperation to develop survey and mapping capacity urgent to the development of dry regions, a priority area in Kenya's National Development Plan. Assistance was given for a diploma training course for new and mid-level employees through: 1) Strengthening the management capacity of the Kenya Institute of Surveying and Mapping; 2) Establishment of a system for managing equipment; 3) Improvement of management and evaluation of the course; 4) Raising the level of instructors' technical knowledge; 5) Improvement and development of curriculum and educational materials. Outside this proejct as well, dispatch of an individual expert to assist with surveying technology was implemented, grant aid ws given for the Institute's construction, and Third-country Training cooperation occurred. Besides this, an agreement for exchange with Jomo Kenyatta University of Agriculture and Technology was concluded.

No	Country	Project Name	Period	Type of Schemes	Mid-term Objective	Characteristics
21	Tanzania	Sokoine University of Agriculture Centre for Sustainable Rural Development : SCSRD	1999.5-2004.4	Technical Cooperation project	2-1 3-1	Development of unique community development methods for the targeted regions. The content of the project activities are support for establishment of the Centre for Sustainable Rural Development (research groups in 1) socio-economics; 2) environmental preservation; and 3) resource management); survey research, planning, implementation, monitoring and evaluation for activities concerning various community development problems, etc. Based on the expressed policy of "implementation based on a full grasp of the situation," projects paid due attention to the environment, WAD (Women in Development) and addressing poverty.
22	Poland	Poland-Japanese Institute of Information Techniques	1996.3-2001.3	Technical Cooperation project	1-1 1-2 3-1 3-2 4-2 4-3	In order to promote information use in Poland, this project aimed at training computer technologists and involved implementation of activities at Poland-Japanese Institute of Information Techniques including: 1) development and improvement of the education program of each course; 2) development of various types of educational materials for teachers and students; 3) arrangement, operation and management of maintenance of necessary facilities and machines; 4) allocation of budget for employment of teachers, training and research; 5) implementation of a demand survey and reflection of the results in the curriculum; and 6) strengthening of independent management (establishment of management systems, creation of employment opportunities for graduates, publicity activities, etc.).
1-2 Strengthening of Higher Education Management Capacity						
23	Indonesia	Higher Education Development Support Project in Indonesia/HEDS	1990.4-1992.7	Technical Cooperation project	1-2 2-2 4-2 4-3 3-2	This project, involving Japan-U.S. cooperation, aimed at improving standards for regional higher education (improvement of teacher quality, improvement of management). Implemented activities included opportunities for teachers at the regional institutions to "study away" at top domestic universities and obtain higher degrees, organization of different types of seminars involving Japanese university professors (educational techniques, university management, etc.), training in Japan for teachers and managers of the targeted universities, provision of research equipment and technical books, etc.
24	Indonesia	Higher Education Administration	2002.10-2004.10	Dispatch of Long-term Experts	4-1	The project goals were to improve the management of higher education in Indonesia, vitalize education research, enable assisted projects to be implemented effectively, and enable appropriate policies to be decided. The activities included survey research concerning improvement of higher education institutions, organization of workshops concerning management improvements for vitalization and improvements of contributions to the community, advice concerning policy development, assistance with communication with partner institutions on the Japanese side, and provision of information concerning reform efforts at Japanese universities.
1-3 Building Networks of Higher Education Institutions						
25	Malaysia	Project on Networked Multimedia Education System	2001.7-2005.6	Technical Cooperation project	1-1 1-2	This project had a goal of establishing an educational system at Multimedia University and remote sites, and a mixture of cooperation involving technical training of overseas participants and provision of equipment was implemented. Activities implemented included installing equipment for sending and receiving communications and making this equipment operational, education of distance education instructors and technicians to manage the equipment, a detailed summary of distance education, and development of multimedia educational materials.

No	Country	Project Name	Period	Type of Schemes	Mid-term Objective	Characteristics
26	Thailand	Southeast Asia Engineering Education Network AUN (SEED-NET)	2002.3-2007	Technical Cooperation project	1-2 2-1 2-2	Support for the SEED-Net network comprised of 19 universities from 10 ASEAN countries. Begun as a result of the "Hashimoto Initiative" of then-Prime Minister Hashimoto, the project aims to build a network that is able to implement human resource development for engineering higher education institutions in the region and, through collaboration with 11 universities in Japan, to improve education and research capacity. Activities implemented are mainly assistance for research, provision of equipment, organization of seminars for presenting research results, publication of research journals assistance for participation in academic association meetings, etc.
27	Laos	Project for Fostering the Academic Exchange and Cooperation for Teachers of the Faculty of Electronic and Architecture, National University of Laos	1999.6-2001.6	Third-country Training, Dispatch of Third-country Experts	1-2	This project aimed to establish university education in Laos in the fields of engineering and electrical engineering for the development of human resources. In order for teachers at National University of Laos to be able to obtain undergraduate degrees from Thailand's KMITL, assistance was given so that teachers and department heads from Thailand could be dispatched to Laos and teachers from Laos could participate in practical training at KMITL in Thailand.
28	Fiji	Information and Communication Technologies (ICTs) Capacity Building at the University of the South Pacific	2002.7-2005.6	Technical Cooperation project	1-1 1-2 3-1	This project aimed at promoting higher education that took into account the special features of the South Pacific Island region through the use of information technology. Activities were carried out in three areas: 1) Strengthening of the computer science field; 2) Strengthening of distance education; and 3) Survey research and training concerning information technology to improve socio-economic development. For each area, activities such as training of teachers, establishment of systems, and improvement of facilities were implemented. The hoped-for results included content development and accompanying increase in people accessing the content, improvement of completion rates, and improvement in the quantity and quality of instructors and lectures.
29	Kenya	African Institute for Capacity Development (AICAD)	2001.7 (Exchange of Notes) 2000.8-2002.7	Grant Aid, Technical Cooperation project	2-1 2-2 3-1	To promote the development of human resources in Africa, the African Institute for Capacity Development was established with three functions: joint research, expansion of training and information networking. In relation to establishment of these functions, activities implemented were: 1) a needs survey; 2) creation of guidelines and a plan for project implementation; 3) project implementation; and 4) monitoring and evaluation of results. As the base for this project, JICA made use of Jomo Kenyatta University of Agriculture and Technology, which had received support for establishing a foundation as a higher education institution from JICA for more than 20 years and had produced results. The project aimed to use Third-country Training, local training, grant aid, and development survey schemes together to promote a network among African universities in the East Africa region.
1-4 Long-term Training, Grant Aid for Human Resource Development Scholarship						
30	China, Mongolia, Bangladesh, Myanmar, etc.	Japanese Grant Aid for Human Resource Development		Grant Aid		In order to promote movement towards a market economy and develop human resources who can be the nucleus for vitalizing the economy, the project provides financial support for pre-travel education, airfare, accommodations, tuition, etc. in fields such as law, economics, management and public policy.
31	ODA target countries	Long-term Training Program		Technical Training		A program to provide opportunities for research at Japanese higher education institutions for human resources from administrative agencies, research institutes, universities, etc. and for those likely to be involved with policy-making in the future.

No	Country	Project Name	Period	Type of Schemes	Mid-term Objective	Characteristics
32	Globally	Scholarship Program for International Students Studying in Japan at Their Own Expense	2001.7-2002.12	Development Study		To assist students from developing countries in studying in Japan at their own expense through educational scholarships, a plan for the United Nations University to serve as the implementing institution and provide funds through yen loans is being discussed. In order to make the project happen, a survey with the goal of establishing a plan for the project at United Nations University, developing a plan for raising funds, and discussing a structure for managing the program was implemented. Note: Because projects in science and mathematics education are categorized as “basic education,” they were not included in this report.

Appendix 2 Basic Check List

Below are the necessary basic indicators for understanding the present situation and issues facing higher education. When using this data, UNESCO statistics (such as "UNESCO Statistical Yearbook") are key reference materials. One can also use the World Bank's *World Development Report* and UNDP's *Human Development Report*, but most data used in these reports is originally from UNESCO. In addition, OECD compiles more detailed and precise educational data concerning the 29 member countries, and from 1998, it has also provided data concerning 13 developing countries.[1] Furthermore, in many cases, the statistics agency and education ministry of each national government make detailed data available to the public on their websites and other places.

However, as much of the data that can be obtained is actually incomplete, caution is needed. UNESCO is working to help standardize the data, but in many cases, definitions of indicators, years, area of coverage, and data collection methods differ. Also, even if data is from the same country, one sees many cases where the previous data's area of coverage or collection method was different. Often with educational financing, education expenditures by the central government and local governments are not clearly differentiated, nor are operating expenditures and development expenditures. In addition to these problems of data correspondence, there is also a need to be careful concerning the data's degree of precision. For example, there are times when there is a large difference between data gathered at a local level and national level sample data. This is because the data collection implemented locally sometimes slightly exaggerates the current situation for political reasons.

Therefore, when using things like comparative data from year-to-year or across countries to make interpretations, it is necessary to understand the limits of this data.

The indicators presented here are, in the end, items to help with grasping the general situation of higher education. When initiating actual cooperation, it is necessary to do precise surveys appropriate to the targeted country or region and to the target institution.

[1] OECD (http://www.oecd.org/)

Basic Check List

	Check Items / Indicators	Unit	Calculation Method	Note
Education System				
1	Years of education (primary and secondary)	Years		
2	Years of compulsory education	Years		
Educational Volume				
3	Gross enrollment ratio in primary education	%	Number of children enrolled in primary school/primary school-age population	There are two types of enrollment ratios: gross and net. The gross enrollment ratio is the ratio of number of students enrolled to the school age population, while the net enrollment ratio is the ratio of the number of school-age students enrolled to the school-age population. The five years following the completion of secondary education are used as the “school age” for higher education. Because of cases where many students are not promoted, making comparisons using the net enrollment rate is more accurate. However, in developing countries, obtaining net enrollment data is often difficult.
4	Net enrollment ratio in primary education	%	Number of school-aged children enrolled in primary school/primary school-age population	
5	Gross enrollment ratio in secondary education	%	Number of children enrolled in secondary school/secondary school-age population	
6	Net enrollment ratio in secondary education	%	Number of school-aged children enrolled in secondary school/secondary school-age population	
7	Gross enrollment ratio in higher education	%	Number of students enrolled in higher education/higher education school-age population	
8	Number of higher education institutions			By grasping the number of institutions that are public or private, by educational level and by field, one can grasp the characteristics of higher education in a given country. According to the International Standard Classification of Education (ISCED), higher education institutions refer to universities, teaching training institutions, and other higher level specialty institutions, and have the minimum standard for entry of completion of secondary education. In order to see whether the education provided matches the needs of society, it is good to confirm in what specialty areas each higher education institutions awards what level of degree (undergraduate, Master's, teaching license, etc.), together with the number of students enrolled at each institution.
9	Number of higher education students	people		
	Number of tertiary students per 100,000 inhabitants	people		
10	Percentage of students (and graduates) by field of study	%		The percentage of undergraduate and graduate students in each field of study. The ISCED categorization of fields of study is: education, liberal arts, law, social sciences, naturalsciences, engineering, agriculture, and medicine.
11	Adult literacy rate	%	Number of literate adults ages 15 and above/Population 15 and above	
12	Youth literacy rate	%	Number of literate youth ages 15-24/ Population 15-24	

	Check Items / Indicators	Unit	Calculation Method	Note
Educational Quality				
13	Number of teaching staff at higher education institutions	people		
14	Percentage of teachers with required academic qualifications	%	Number of teachers who have at least the minimum necessary academic qualifications set by the government/Population of teachers	The percentage of undergraduate and graduate students in each field of study. The ISCED categorization of fields of study is: education, liberal arts, law, social sciences, natural sciences, engineering, agriculture, and medicine.
Research Quality				
15	Number of papers published on research in the sciences and social sciences			
16	Number of papers cited in other research papers in the sciences and social sciences			
Educational Efficiency				
17	Repetition rate	%	Number of repeaters/Number of students at the beginning of the school year	The repetition rate is the ratio of the number of repeaters to the number of students at the beginning of the school year, and the drop-out rate is the ratio of the number of drop-outs to the number of students at the beginning of the school year. Indices of educational efficiency are important for higher education because it has a high per person cost compared to primary and secondary education. Some countries also put out statistics on graduation rates and rate at which members of a cohort remain in school.
18	Drop-out rate	%	Number of drop-outs/ Number of students at the beginning of the school year	
19	Average enrollment years	years		Together with the repetition rate and the drop-out rate, this indicator is often used to examine educational efficiency.
Educational Finance				
20	Percentage of GNP on educational expenditure	%	Public education expenditure/GNP	The ratios of public education expenditure to GNP and to total government expenditure are used as indicators to measure a country's efforts in educational development. However, it is important to pay attention to the balance of government efforts at different educational levels. While 21 and 22 include both current and development expenditures, 22 includes only current expenditures.
21	Percentage of government expenditure on education	%	Public education expenditure/Total government expenditureNP	
22	Public current spending on higher education as % of total public current spending on education	%	Public higher education expenditure/Public education expenditure	
23	Higher education expenditure per student		Public higher education expenditure/Number of students currently enrolled in higher education	There is ordinarily a large gap in expenditure per student between higher education and primary and secondary education. This indicator is often used when debating the distribution of resources among different educational levels.
24	Scholarship program/student loan program			While on one hand diversification of financial resources for higher education and having beneficiaries carry some financial burden are being promoted, a system for securing fair access is important. In some cases, scholarships and loans will not necessarily target the poorest classes.

	Check Items / Indicators	Unit	Calculation Method	Note
Environment Surrounding Higher Education				
25	Number of Internet hosts per 1,000 people		Number of Internet hosts per 1,000 people in the general population	In the past, things like the number of newspapers published for a population or the degree of spread of television and radio were used to measure diffusion of information technology. However, in recent years it has become possible to obtain data on the number of Internet hosts.
26	Scientists and engineers in R&D		Number of scientists and engineers per 1 million people in the general population	This indicator shows the percentage of people who have undergone training in a scientific field in preparation for scientific work, and who are engaged in specialized research and development jobs. Usually, for these jobs, it is necessary to have completed a higher education program.
27	Number of students abroad as percentage of students at home	%		
28	Universities in neighboring countries	%		When discussing cooperation for higher education in a country, whether or not one can make use of higher education institutions in neighboring countries is a point to be considered.
29	Movement of young people abroad/number of people going abroad to earn money	people		In some developing countries, there are many graduates of higher education who want jobs and move to other countries in order to earn money. On the other hand, there are countries like those in the Middle East where these kinds of temporary laborers allow a certain level of labor to be secured. This kind of mobility of human resources has a big influence on higher education policy.
30	Annual population growth rate	%		The annual population growth rate and movement of population are indicators connected with educational demand.
31	Youth unemployment ratio	%	Number of unemployed youth/Youth population capable of working	This refers to the unemployment ratio among youth between the ages of 15 or 16 and 24. The magintude of the youth unemployment ratio influences educational results. However, in developing countries where many people work in the informal sector or are self-employed and there is a traditional distribution of labor, it is difficult to obtain an accurate measure of the unemployment ratio. However, the concept of underemployment (having only partial work, low income, and in a situation of not being able to make maximum used of technology and productivity) is now being adopted in each country and data adjustment is progressing.

Comparison of Countries Using Basic Check List

	Items/Indicators	Philippines	Tanzania	Developing Country Average	Japan	Data Years	Sources
Education System							
1	Years of education (primary and secondary)	6-3-1	7-4-2		6-3-3		(4)
2	Years of compulsory education	6	7		9		
Education Volume							
3	Gross enrollment ratio in primart education	116%	67%	102%	102%	1995	(2)
4	Net enrollment ratio in primary education	98%a	48%b		100%a	a: 1985-1987 b: 1998	(3)
5	Gross enrollment ratio in secondary education	79%	5%	55%	103%	1995	(2)
6	Net enrollment ratio in secondary education	51%a	4%b		97%b	a: 1985-1987 b: 1998	(3)
7	Gross enrollment ratio in higher education	30%	1%	10%	41%	1995	(2)
	Gross enrollment ratio in higher education--Female	34%	0%	9%	38%	1995	(2)
8	Numer of higher education institutions	1452a	28b		1,283a	a:2002, b:2002	(5) (6)
9	Numer of higher education students	2,022,106a	12776b		3,090,211b	a: 1995, b: 2002	(2) (8)
	Number of tertiary students per 100,000 inhabitants	2,981	43	980		1995	(2)
10	Percentage of students (and graduates) by field of study					1996	(7)
	Education	(15)			8 (8)		
	Liberal Arts	(6)			56 (55)		
	Law, Social Sciences	(31)					
	Natural Sciences, Engineering, Agriculture	(28)			23 (23)		
	Medicine	(19)			8 (8)		
11	Adult literacy rate	95.3%	75.1%	73.7%	100%	2000	(3)
12	Youth literacy rate	98.7%	90.6%	84.6%	100%	2000	(3)
	Youth literacy rate (Female)	98.8%	87.9%	80.5%	100%	2000	(3)
Education Quality							
13	Number of teaching staff at higher education institutions	93,884a			354,814b	a:2002, b:2002	(6) (8)
14	Percentage of teachers with required academic qualifications	Ph.D.: 8%, Master's Degree: 26%				2000	(6)
Research Quality							
15	Number of papers published on research in the sciences and social sciences	294	198		58,910	1995	(2)
16	Number of citations in research in the sciences and social sciences	2,893	2,638		930,981	1993-1997	(2)
Educational Efficiency							
17	Repetition rate						
18	Drop-out rate						
19	Average enrollment years						
Educational Finance							
20	Percentage of GNP on educational expenditure	3.4%		3.3%	3.6%	1995-1997	(3)
21	Percentage of government expenditure on education	15.7%a	9.9%b	13.2%	9.9%a	a: 1995-1997, b: 1985-1987	(3)
22	Public current spending on higher education as % of total public current spending on education	18.0%a	12.7%b	15.7%	12.1%a	a: 1995-1997, b: 1985-1987	(3)
23	Higher education expenditure per student						
24	Scholarship program/student loan program	40,294 people	(10.21%)			2001	(6)

	Items/Indicators	Philippines	Tanzania	Developing Country Average	Japan	Data Years	Sources
Environment Surrounding Higher Education							
25	Number of Internet hosts per 1,000 people	0.3	0.0	.0.7	36.5	2000	(3)
26	Scientists and engineers in R&D	156			4,960	1990-2000	(3)
27	Number of students abroad as percentage of students at home				1.6%	1995	(2)
28	Universities in neighboring countries						
29	Movement of young people abroad/number of people going abroad to earn money						
30	Annual population growth rate	2.2%	2.8%	1.6%	0.3%	1990-2000	(1)
31	Youth unemployment ratio				9.2	2000	(3)

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(3) UNDP (2002) *Human Development Report 2002*
(4) UNESCO Institute for Statistics (http://www.uis.unesco.org)
(5) The United Republic of Tanzania “Education” (http://www.tanzania.go.tz/educationf.html)
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(8) MEXT “Statistics” (http://www.mext.go.jp/english/index.htm)

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2. Web sites

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(http://www.jsps.go.jp/english/index.html)
Ministry of Education, Culture, Sports, Science and Technology "International Cooperation"
(http://www.mext.go.jp/english/org/exchange/65.htm)
——— "International Exchange and Cooperation"
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Philippines Commission on Higher Education "Statistics"
(http://www.ched.govph/statictics/index.html)
The United Republic of Tanzania "Education"
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UNESCO Institute for Statistics (http://www.uis.unesco.org)

Development Objectives Chart for Higher Education

Development Objectives	Mid-term Objectives	Sub-targets of Mid-term Objectives	Examples of Activities
1. Improvement of Educational Activities	1-1 Response to Diverse Educational Needs by Diversifying Higher Education Institutions	Diversification of Courses of Study	○Promotion of establishment and expansion of community colleges and polytechnics △Promotion of establishment of short-term programs (e.g. technician training course, business course, etc.) ×Promotion of establishment of part-time programs (evening classes, etc.) ×Promotion of establishment of open universities
		Promotion of Distance Education by Making Use of Information and Communication Technology	×Distance education making use of television, radio and telephone △Building and operation of distance education systems making use of information technology or satellite broadcast
		Promotion of Private Education	×Promotion of establishment of private higher education institutions
		Provision of Higher Education through Regional Cooperation	△Establishment of regional universities
		Adjustment of Systems to Make Diversification of Higher Education Possible	×Relaxation of standards for establishing higher education institutions ×Arrangement of laws and tax systems to promote private education
	1-2 Raising the Quality of Educational Activities	Improvement of Teacher Quality	◎Implementation of programs for technical guidance and training of teachers, and for them to obtain degrees △Implementation of appropriate teacher evaluation ×Establishment of a bonus system for teachers ×Improvement in the benefits and security system for teachers (salary, various allowances, promotion, retirement pay, etc.)
		Improvement of Student Quality	△Implementation of guidance and counseling for students △Review of the entrance examination system (e.g. making entrance standards and the selection process more appropriate) ×Appropriate provision of scholarships and loans
		Improvement of Curricula	◎Establishment of appropriate curriculum (e.g. yearly teaching plan, unit planning, content of subjects taught, exercises, evaluation methods, etc.) △Ensuring compatibility of courses of study among higher education institutions within a region or country through collaboration (networking, etc.)
		Improvement of Teaching Methods	◎Proposals and training on effective and efficient teaching methods ○Planning, establishment and implementation of teaching methods using information technology
		Improvement of Textbooks	△Promotion of development of multimedia educational materials and teaching methods making use of information technology ◎Development and improvement of educational materials (e.g. teacher guidebooks, translations of works in local languages, creation of manuals, lecture materials)
		Improvement of Facilities and Equipment	○Extension and rebuilding of classrooms and laboratories ◎Provision of machinery for experiments and hands-on learning △Equipping of libraries ×Provision of student dorms and other accessory facilities
	1-3 Expansion of Female Enrollees and Enrollees from Other Vulnerable Groups	Research and Outreach Activities on Higher Education Enrollment of Females and Other Vulnerable Groups	×Research, field surveys, and surveys of consciousness on the enrollment of females and other vulnerable groups in higher education ×Implementation of various types of outreach activities concerning higher education enrollment of females and other vulnerable groups ×Use of females and members of other vulnerable groups who have completed higher education as role models
		Introduction of Affirmative Action Enrollment Policies for Females and Other Vulnerable Groups	×Introduction of quota systems for higher education entry of females and members of other vulnerable groups ×Relaxation of academic standards for higher education entry for females and members of other vulnerable groups ×Priority scholarship consideration for females and members of other vulnerable groups
		Diversification of Higher Education Institutions to Meet the Needs of Females and Other Vulnerable Groups	×Provision of low-cost educational courses of study (correspondence education, short-term courses, etc.) △Provision of educational courses in remote areas to allow completion of courses of study (distance education, etc.) ×Provision and expansion of educational facilities that pay attention to gender issues (dorms, satellite facilities, etc.) ×Increased flexibility in courses of study (part-time courses, short-term courses, etc.)
		Employment Assistance after Graduation for Females and Members of Other Vulnerable Groups	×Shaping of a labor market that is fairer and more open ×Priority provision of employment information to females and members of other vulnerable groups
		Rectification of Inequities in Primary and Secondary Education for Females and Members of Other Vulnerable Groups	*Refer to *Approaches for Systematic Planning of Development Projects: Basic Education*
2. Strengthening of Research Function	2-1 Development and Strengthening of the Capacity of Researchers	Training of Researchers	○Provision of graduate-level courses of study and research centers ◎Implementation of short-term training (e.g. organization of technical guidance, seminars, short training courses, workshops, symposia; implementation of mutual exchange projects, etc.) ○Implementation of " study away " programs (abroad, regionally, nationally) ◎Improvement of research content and development methods
	2-2 Improving the Research Environment in order to Strengthen the Research Function	Improvement of Facilities and Equipment	◎Provision of research equipment (implements for experiments, etc.) ○Provision of research facilities and equipment (laboratories, etc.) ×Promotion of access to online journals ×Promotion of international joint use of research facilities
		Securing of Opportunities for Presentation of Research	△Attendance and academic presentations at meetings of international academic societies ○Organization of seminars and workshops concerning research results △Promotion of establishment of academic associations and of institutional publications ×Promotion of presentations through means such as the use of online journals

Development Objectives Chart for Higher Education

Development Objectives	Mid-term Objectives	Sub-targets of Mid-term Objectives	Examples of Activities
		Vitalization of Research Activities	△Building of domestic and international inter-university networks ○Planning and initiation of functional units for developing joint research △Creation of a system for securing research funds (e.g. competitive funds) ×Creation of an incentive system for research activities (e.g. research allowances)
3. Promotion of Contributions to Society	3-1 Assistance to Community Development Activities	Understanding of Needed Community Development Activities	△Survey research to determine development issues based on the special characteristics of the community and specific areas for training
		Improvement of Education and Research Curricula so that Education Matches Community Development Needs	×Participation of community development practitioners in curriculum development ○Research on appropriate technological development that meets the needs of the community ○Provision of education that meets the needs of the community and establishment of training capacity
		Planning, Technical Assistance and Provision of Information Related to Community Development Activities	×Implementation of community development activities, technical guidance for the implementation of community development activities, and expansion of consultancy services (Extension and Consultancy Services) ×Establishment of different types of open courses for adults (IT, English, etc.)
	3-2 Strengthening of Cooperation with Industry	Understanding of Industry Recruitment and Human Resource Needs	△Survey and analysis of graduates' employment data △Survey and analysis of the human resource needs of industry
		Creation of a Mechanism for Collaboration between Higher Education Institutions and Industry	×Participation of industry representatives in various management and advisory structures of higher education institutions ×Exchange between educators and researchers at higher education institutions and industry personnel
		Improvement of Education and Research Curricula to Meet Industry Needs	×Participation of industry representatives in curriculum development ○Implementation of joint industry-university research ×Promotion of recognition of the various types of educational institutions established by industry
		Improvement of the Employment Situation of Graduates	○With the cooperation of industry, provision of employment information and counseling △Implementation of internships in industry for current students ×Student participation in industry-university joint research ×Development of entrepreneurial skills in higher education programs
4. Improvement of Management	4-1 Establishment of Legal, Institutional and Financial Frameworks	Construction of a Policy Framework	△Establishment of a higher education policy based on international agreements and goals, the current situation of the country, the content of the country's national development plan, the needs of the people, and trends in other sectors
	4-2 Strengthening the Management Function	Training of Human Resources in Higher Education Administration	×Human resource development of government administrators
		Improving Management Capacity at Higher Education Institutions	×Improvement of university self-government △Improvement of internal communication through means such as holding regular meetings △Establishment of guidelines and plans for implementing projects at the higher education institutions ×Securing of accountability ○Training for office staff to improve office management skills △Sharing of information via an internal university network (e.g. introduction of an internal management information system) ○Implementation and promotion of public relations activities
		Improvement of Human Resource Management at Higher Education Institutions	○Securing and placement of the necessary number of teaching staff △Establishment of recruitment and evaluation methods for teaching staff
		Establishment of Materials Management and Equipment Maintenance System at Higher Education Institutions	○Creation of a system for managing and conserving machinery and laboratories
	4-3 Improvement of Finance	Diversification of Financial Resources	△Promotion of income-generating activities (e.g. consulting work) △Promotion of collaboration with local industry and companies (contracted research, etc.) ×Securing of access to diverse financial resources ×Promotion of private education ×Promotion of beneficiaries of the education supporting costs (tuition fees, etc.)
		Improvement of Financial Management	△Establishment of a mechanism for budgetary allocation ×Establishment of an auditing function
		Review of Scholarship and Loan Systems	×Improvement of scholarship and loan systems ×Appropriate selection of scholarship students ×Improvement of the loan repayment system ×Securing of financial resources for scholarships and loans
	4-4 Quality Assurance	Creation of Evaluation System	△Development and improvement of appropriate evaluation and monitoring methods △Implementation of regular monitoring and evaluation (quality of the education and research programs, relevance, internal efficiency, budget, etc.) ×Introduction of outside evaluation ×Appropriate appraisal and training of evaluators ×Creation of a feedback system for evaluation results
		Establishment/Improvement of Accreditation Systems	×Establishment of institutional accreditation ×Establishment of professional accreditation

Examples of Activities:
◎＝JICA has considerabele experience
○＝JICA has certain experience
△＝JICA has experience as a component of projects
×＝JICA has little experience