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.

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.

| 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 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.

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.

> 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.

< 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.

> 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.

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

No	Country	Project Name	Period	Type of Schemes	Mid-term Objective	Characteristics
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

No	Country	Project Name	Period	Type of Schemes	Mid-term Objective	Characteristics
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.

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[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)

Sources:

(1) World Bank (2002c) *World Development Report 2003*

(2) World Bank (2000) *Higher Education in Developing Countries, Peril and Promise*

(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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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 counselling 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
3. Promotion of Contributions to Society	3-1 Assistance to Community Development 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)
		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