JP0150196 JAERI-Conf 2000-014

THE FIRST SEMINAR ON HUMAN RESOURCE DEVELOPMENT IN NUCLEAR FIELD REGIONAL NUCLEAR COOPERATION IN ASIA

TOKYO, JAPAN, 25-26 NOVEMBER 1999

INDONESIA'S PRESENT STATUS AND NEEDS OF HUMAN RESOURCE DEVELOPMENT IN NUCLEAR FIELD

by

JENI RUSLAN
FP SAGALA

NATIONAL NUCLEAR ENERGY AGENCY
OF
INDONESIA

INDONESIA'S PRESENT STATUS AND NEEDS OF HUMAN RESOURCE DEVELOPMENT IN NUCLEAR FIELD

Presented by
Jeni Ruslan and F.P.Sagala

I. Introduction

BATAN started out as a government committee established in 1954. From then, Batan has developed its researches in almost practically all nuclear fields, from agriculture, medicine, to studies for the introduction of NPP in Indonesia. BATAN itself has a new organizational structure, based on Presidential Decree No.197 of 1998. BATAN is headed by a Chairman, assisted by four deputies and an executive secretary. The Deputy for Basic Research and Application is responsible for the phase of basic and applied research. The Deputy for the Development of nuclear Technology and Energy; and the Deputy for the Development of Nuclear Fuel Cycle Technology and Engineering are in charge of the technology development phase, while the Deputy for the Utilization of the Results of Research & Development and Public Acceptance of Nuclear Science and Technology will be responsible for the dissemination and utilization of products manufactured by BATAN. The Executive Secretary oversees the organizational aspects for the planning, organizing, budgeting and human resources.

The situation in Indonesia has been much influenced by the economic crisis which is still being faced by Indonesia. Priority has been given to fulfill, as well as to promote agriculture, health and the industry related to the people's welfare. Therefore the government is focussing on development in the application of research which may develop and improve the immediate needs of the people.

Inspite of all the benefits offered by nuclear technology, we should admit that our community is very sensitive to any possible harm effect that may be caused by nuclear energy. Therefore, the safe application of nuclear

energy is a primary condition for promoting products that are developed based on research or technology utilizing nuclear energy. Building a safety culture within the organization, as well as providing specialized training in safety will become one of our main concern.

II. National Strategy

BATAN's research and development activities, based on its strategic planning, can be grouped into four areas. They are ; 1. Basic human needs, 2. Energy, natural resources and environment, 3. Industry, 4. Socio-cultural and institution.

In the area of basic human needs, the goal is to increase the application of nuclear techniques in agriculture, livestock production, health and to promote products that are produced from the utilizing of nuclear energy.

The strategy includes socialization of the products and services, conducting research and development activities domestically and abroad with the cooperation of relevant institutions.

In the area of energy, natural resources and environment, the goals are to study the energy needs with a possible nuclear energy option for long-term planning in the national energy systems, to master the technology in processing nuclear materials, to develop nuclear safety systems that protects the worker, the public and the environment , as well as optimizing the utilization of existing nuclear reactors.

The Strategy to achieve these goals, is the updating of the long-term energy planning, updating the data on nuclear minerals deposit, conducting research and development in minerals processing and in nuclear safety technology.

In the industrial sector the goals are to promote the application of nuclear techniques in the industry, to study the potentials of nuclear technology and its supporting technology in the development of the national industry and vice versa.

The strategy is to continue an on going research and development in nuclear science and technology, to put extra efforts to increase the level of nuclear techniques acceptable to the community, as well as the country's decision makers.

Based on the current economic and political situation, our immediate programme has had to be redesigned and tailored to our most urgent needs, namely to be aimed at addressing basic human needs.
In this regard, we shall strive to continue those previous programmes relevant and pertinent with those aims in the area of food, agriculture, and livestock production; health care and medicine; and in industrial process applications. The use of radiation, to obtain improved varieties of rice, beans; to prolong the supply of food and commodities, as well as medicine and medical herbs; and to improve the characteristics of materials; all these will be continued and as far as possible enhanced.

In the meantime we have made considerable investments in manpower development in anticipation of the introduction of nuclear power. We shall continue to maintain our manpower and to continue to upgrade our capabilities.

Therefore, the aims of our programme are :

1. the realization of long-term national energy plan which includes the nuclear option;
2. the development of capability in the nuclear fuel technology in support of a future nuclear industry;
3. optimal utilization of research reactors and related facilities for the benefit of both the energy and non-energy sectors; and
4. the establishment and achievement of a reliable and secure nuclear safety system.

III. Current Developments

The socio-cultural and institution development will include the building of an organizational systems that is adaptive to change, building profesional and motivated employees, strengthening the safety culture through-out the organization, developing standards and quality assurance, and other social and technical infrastructure. Those could be achieved through human resource development, improving the capabilities of management to care with complex social and technological issues, and supporting the education and training programs in cooperation with international institutions as a means of technology transfer.

BATAN, as of September 1999, has 3889 employees, 26% of them have bachelor degrees, 6% hold master degrees, and only 2% hold doctoral degrees, a total of 34% employees with university education.
Of those who are trained in the universities 29% hold degrees in natural sciences or engineering. Others 11% have either non-vocational or vocational education beyond High School.
The rest of 55% have high school education or lower, they are administrative clerks (25%) or technicians (30%).

It is the Indonesian government policy to subsequently reduce the member of unskilled civil servants engaging in the low skill jobs, and put more emphasize on building profesional human resources conducting specialized duties. As the figure suggests, we will continue to develop our human resources, and every effort is given to inovate the capability and expertise of by educating them in their field of expertise, train them to gain knowledge and skills, in a way which will affect the quality of research and other scientific or engineering services.

In the human resource development, BATAN's Education and Training Center in collaboration with some universities and other national / international institutions, managing education and training programs for employees.

The purpose of these trainings are expected to fulfill the need for qualified profesionals in a specific area of knowledge and skill. Bilateral and multilateral schemes are used to help in the financing and supporting of the human resources development. To date, there are 43 BATAN employees studying in various universities in Japan, while another 42 employees study in six different countries.

IV. **The Needs of Human Resource Development**

Research and development that have more direct impact to the community will become a priority in the coming years. Without undermining the importance of basic research in advance fields, we will expect to have more research on application to optimize utilization of research reactors and related facilities for the benefit of both the energy and non energy sectors.

The quality and capability of researchers would be improved with post-doctoral programs, therefore we shall encourage our researchers to be involved in such programs conducted by local/overseas universities or research institutions.

In our endevour to improve the education and training quality, we require assistance from JAERI to conduct or to arrange forums for exchange of information, discussions, and training of trainers in order to develop suitable teaching materials for our personnel.

In the managerial aspect of human resource development within nuclear research establishments, one of our effort is to train research-group leader(s) in managing research and development activities, as well as building effective communication skills to deal with public interests in nuclear technology and its application.

Due to the need for immediate application of nuclear techniques for supplementing the various population needs, we decided that in the near future, the empowerment of our manpower should be adequate with deverse capabilities to achieve optimal utilization of our research reactors and related facilities for the benefit of both the energy and non energy sectors.

Wider distribution of experts sent to various areas with minimal knowledge to anticipate science and technology in various areas in the country due to the outonomic policy for country area development (decentralized distribution). This policy concerns country development, which is one of the main current priorities.

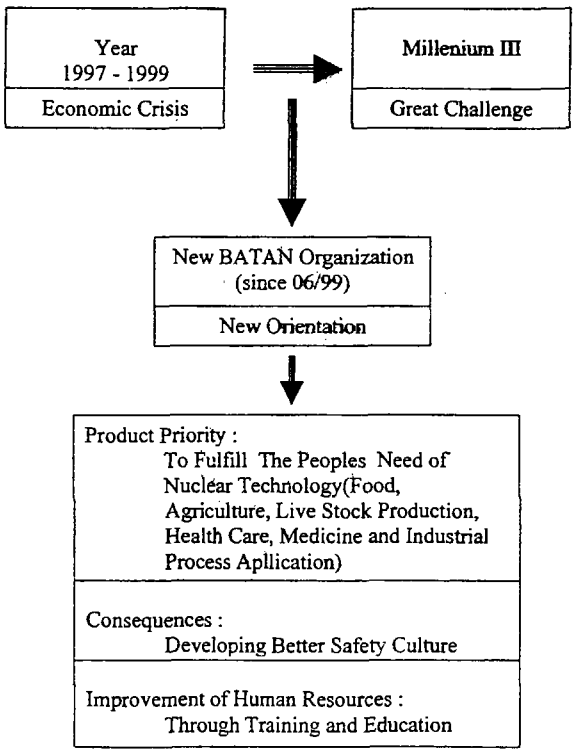
Creating resourcefulness, capability and skills will in turn create programs and in the long run decrease un employment (one of the criteria for development).

INDONESIA'S PRESENT STATUS AND NEEDS OF HUMAN RESOURCE DEVELOPMENT IN NUCLEAR FIELD

By
JENI RUSLAN
FP.SAGALA

25-26 NOPEMBER 1999
TOKYO, JAPAN

The Status of BATAN



NATIONAL STRATEGY

Increased Research and Development Activities in :

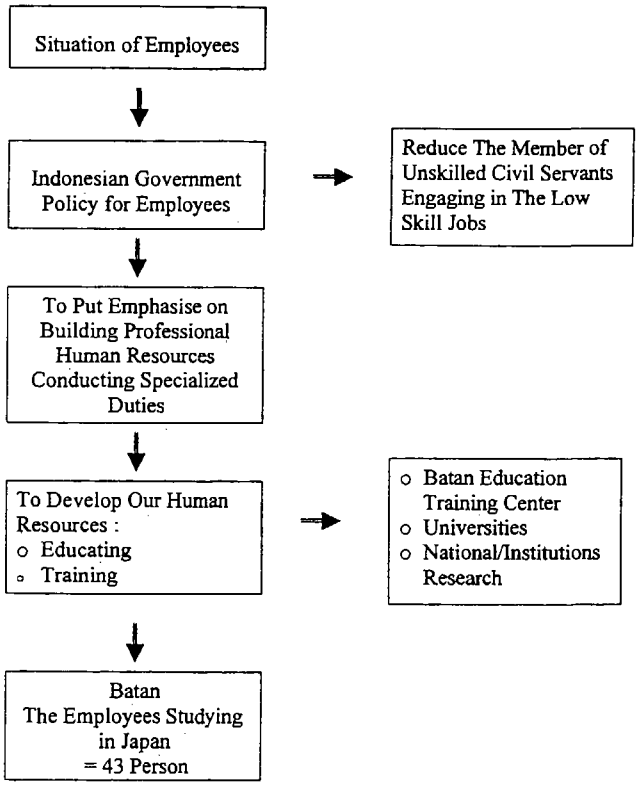
1. Basic Human Needs
2. Energy, Natural Resources and Environmental Aspects
3. Industry

With Respect To The Socio - Cultural Situation and Institutions Involved

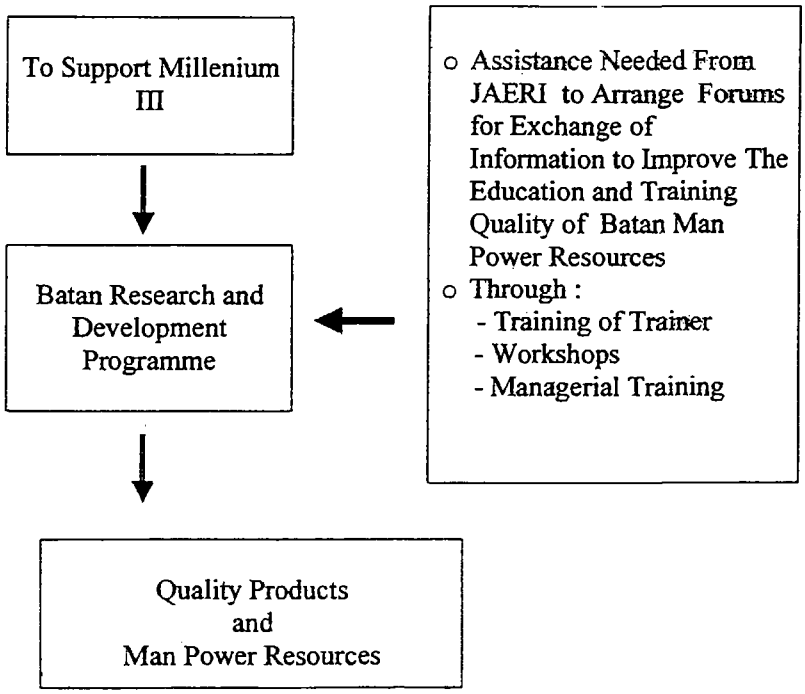
PROGRAMME

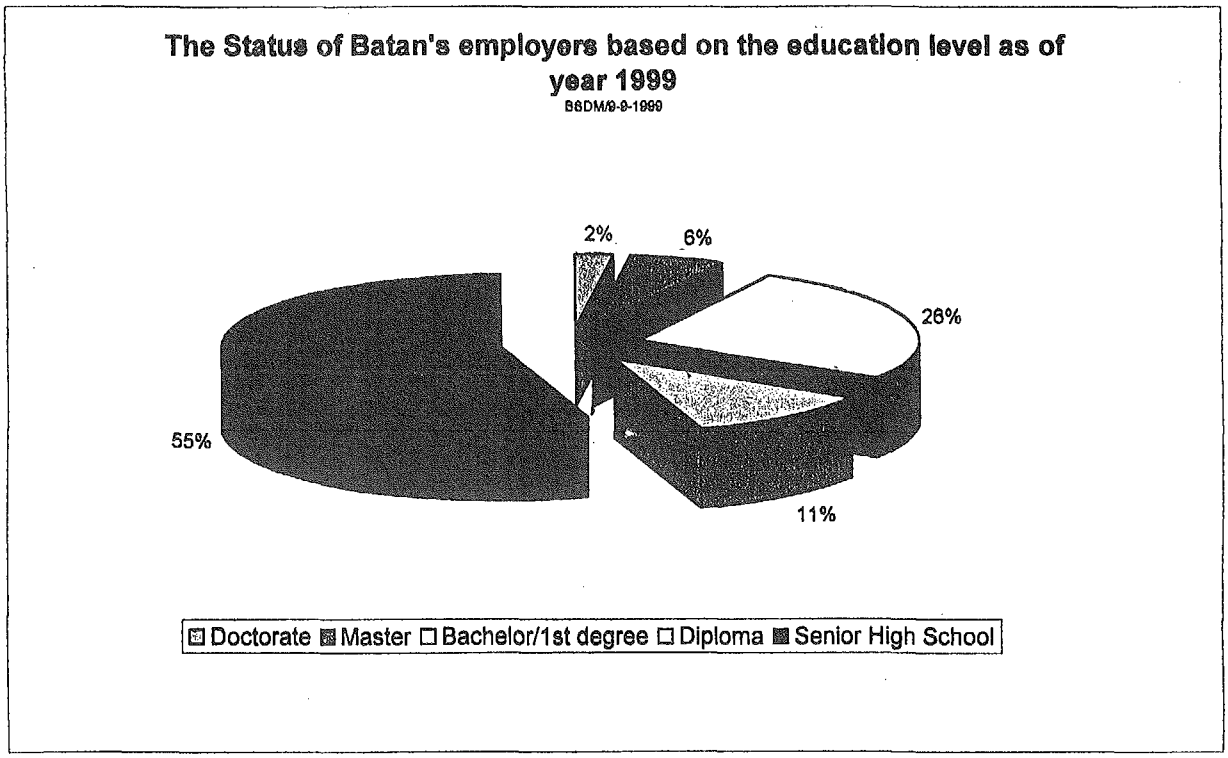
1. The Realization of Long-Term National Energy Plan Which Includes The Nuclear Option.
2. The Development of Nuclear Fuel Technology in Support of a Future Nuclear Industry.
3. Optimization of Research Reactors and Related Facilities for The Benefit of Both The Energy and Non Energy Sectors.
4. The Establishment and Achievement of a Reliable and Secure Nuclear Safety System.

CURRENT MAN POWER DEVELOPMENT



THE NEEDS OF HUMAN RESOURCES DEVELOPMENT




The Status of Batan's employers based on the education level as of year 1999
BSDM/9-9-1999
2%
6%
26%
55%
11%
Doctorate
Master
Bachelor/1st degree
Diploma
Senior High School