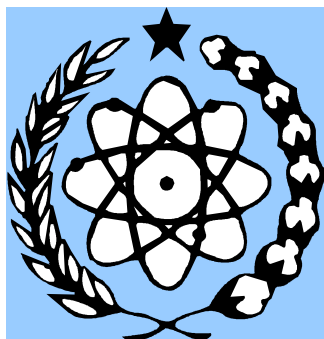


RCA IN THE 21st CENTURY: Enterprising, Meeting Challenges and Capturing Opportunities

Motto:

*RCA - Reliable partner in providing technology end-users with cost-effective
and high impact nuclear based solutions to regional and national development
problems*

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30th Anniversary of the Regional Cooperative Agreement (RCA)
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RCA IN THE 21st CENTURY: Enterprising, Meeting Challenges and Capturing Opportunities

1. INTRODUCTION

1.1. Background

This year 2002 marks the 30th Anniversary of the Regional Co-operative Agreement, known as the RCA. Taking the analogy of a **fruit tree**, it is quite appropriate at this point in time to reflect at least on the following **three basic points**:

- **How big** has the **RCA “tree”** become in the 30 years, and **what shape** has it taken? **How does it compare** with the other trees in its environment?
- What types of **fruits** and how many has it born, and what **benefits** have the fruits given to the society?
- What actions are necessary **to make the RCA** grow **stronger** and bear **more fruits** that will give **greater benefits** to mankind?

From the above point view, it seems appropriate that the paper on the RCA vision written five years ago at the occasion of the **Silver Jubilee of the RCA** be revisited, and a new document be produced. Significant developments have taken place in the RCA since then, and its environment has changed considerably.

1.2. Terms Of Reference (TOR)

This document was prepared in accordance with the Terms Of Reference (**TOR**) sent to the author by the RCA Coordinator Dr. Carlito Aleta on 19th January 2002. The TOR reads as follows:

- *To review the paper on the RCA vision for next 25 years and prepare a new or modified version*
- *The review should take into consideration the progress in the past 5 years in the RCA MSs, the regional scenario in developmental areas such as but not inclusive to energy, environment, natural resources, agriculture and health,*
- *The revised paper should address the vision, mission, strategy, programme and projects for the RCA Member States; the sectoral programmes and strategies;*

the role of the RCA in the development of the region; the enhanced management of the RCA programme ; and other related management issues, such as role of regional office, the lead country, and RRUs.

1.3. Purpose of Document

This document is intended as an input to the Member States and the IAEA, as “**food for thought**” on the occasion of the 30th Anniversary of the RCA, to be celebrated at the forthcoming RCA National Representatives Meeting to be held in Seoul, Korea, this March 2002.

With this document serving as a trigger, it is hoped that serious considerations be given in order that the RCA can, in the future, provide a better response to the regional as well as national needs of the RCA Member States. In concrete terms, it is hoped that the points raised in this document will be further discussed, elaborated, improved and subsequent concrete actions taken by the Member States and by the IAEA for the benefits of all parties concerned.

1.4. Method of Approach and Structure of Presentation

Using the given TOR as a guide, the following method of approach and structure of presented are used:

- After the introduction (**Section 1**), **Section 2** presents a brief look at three major problems faced by the **Third World**, especially the Asia-Pacific Region, to which most of the RCA Member States belong. Attention was focused on those matters pertaining to the efforts to achieve a **sustainable development**.
- The “**raison d’etre**” as well as some **fundamental principles of the RCA** were examined from a “**business perspective**”, focusing on the question on “**how to achieve customers’ satisfaction**” (**Section 3**).
- **Section 4** deals with the **RCA environment**. Important potential RCA partners are pointed out, ways and means to develop and /or strengthen co-operations with these partners are discussed with a view to bring greater benefits to the potential customers in the region.
- Considerations on the **RCA operation** are presented in **Section 5**. Some basic principles are reviewed, the scope of programme is outlined and the scope of resources is briefly addressed.
- **Section 6** contains **concluding remarks** and **recommendations**.

2. QUEST TOWARDS SUSTAINABLE DEVELOPMENT IN THE 21ST CENTURY

2.1. Major Problems Faced by the Third World

Three major problems are facing the planet earth, especially the so called the Third World. These problems are:

- **Population explosion**
- **Rapid depletion of natural resources**
- **Degradation of the environment**

Out of the present world population of about 6 billion, more than one third live in China and India alone. Practical questions on the **basic human needs** immediately arise, such as **how to feed** these huge quantity of world population, how to provide them **sufficient fresh water, clothing and housing**, how to provide them with **adequate health care** and so on.

Next, one observes a rapid depletion of natural resources, due on one side to the voracious demands of the industries located mainly in the highly developed nations and on the other side to subsistent activities of the people struggling to achieve a decent living in the developing world. As an example, world hydrocarbon resources are being exploited at an unprecedented speed, rapid deforestation occurs in many parts of the world. These activities pose serious threats to the environment, as well as the survival of the future generations.

How to achieve the **development on a sustainable basis** is thus a **key question** that has to be satisfactorily answered both by the developing and the developed worlds. Indeed, the answer to this question shall definitely affect the sustainability of human civilization on the planet earth as a whole!

2.2. Nuclear Techniques for Sustainable Development

Three factors are needed as **pillars** of a sustainable development of a society, namely sustainable **economic development**, sustainable **energy supply** and sustainable **environmental care**.

The sustainable development, especially seen from the point of view of a developing country, demands attention and efforts in three major areas, namely:

- **Basic Human Needs**, covering the provision of adequate amount of nutritious food, health care and fresh water at affordable price for the population.

Food draws attention to the demand for technologies to support agriculture, primarily food crops and livestock. Nuclear techniques can make significant

contributions in mutation breeding, insect and plant disease control, plant growth optimization and post harvest processing. Livestock production can be significantly improved through application of nuclear techniques in animal nutrition, disease control and reproduction. Nuclear techniques can furthermore offer significant contributions in reducing post-harvest losses and in food processing.

In health care, nuclear techniques have made significant contributions in field of diagnostics, therapy and nutrition. Similarly, nuclear techniques can provide cost-effective solutions to the identification and management of water resources.

- **Economic Development, involving the industrial growth, energy supply and the development of an effective waste management system.**

Nuclear techniques cover a wide spectrum of applications in materials testing and characterization, in process monitoring and process control and in materials transformation (radiation processing). Furthermore, nuclear techniques can offer significant contributions in waste management, such as flue gas treatment. Nuclear techniques can also provide cost-effective solutions to problems in the exploration and exploitation of geothermal and mineral sources. Last but not least, nuclear power can play an important role in ensuring sustainable energy supply for economic development.

- **Care of the Environment and Natural Resources**, namely the development of legal and technological instruments to monitor, protect and restore the environmental condition, as well as to make a judicious use and conservation of natural resources.

Nuclear techniques can offer significant contributions in the identification, dispersion and deposition of pollutants in air, water, and in marine and coastal environments. In addition, the techniques can also be applied to assess the impact of pollution to human health and the ecosystem.

2.3. Major Challenges

Countries wanting to apply nuclear-based solutions to specific technical problems in the national development programmes, especially those in the third world, are often faced with a manifold of challenges and problems. Some of these are:

- **How to improve the “AUA” (Awareness, Understanding and Appreciation)** of the population/public on the benefits and risks of nuclear technology? The AUA effect is a crucial pre-requisite for public support and participation of the technology end-users.

Special communication techniques and information packages need to be carefully developed for different target groups, such as decision makers, intellectuals and students, general public and /or their representatives, non-government organizations (NGOs) and the business/industrial sector.

- **How to develop a national capacity in nuclear technology in a most cost-effective way?**

National capacity includes the availability of adequate number of competent and dedicated personnel, scientific facilities, and supporting legal and technical infrastructure. The application nuclear-based solutions often require the support of appropriate R&D activities for specific purposes.

- **How to implement nuclear based solutions?**

The lack of awareness, understanding and, subsequently interest, especially on the part of the **end-users**, poses a considerable challenge in the attempt implement nuclear based solutions to specific technical problems. In this case, a **strong government commitment and initiative** are needed to promote and facilitate collaborative activities involving **technology producers/suppliers** and **technology end-users**.

2.4. Role of the IAEA and Regional Co-operation

Bilateral and multi-lateral links and co-operation with international partners constitute an important part of the efforts by the third world countries to develop and use their national capacity to provide nuclear based solutions to various specific technical problems in national development programmes. In the Asia-Pacific region, the International Atomic Energy Agency (the Agency/IAEA) and the Regional Co-operative Agreement (RCA) play an important role in accelerating the development and application of nuclear techniques for human welfare.

Given the situation and condition of the IAEA, an obvious question from the point of view of a participating country is how to design an optimal combination of bilateral cooperation programmes with the IAEA and those of the RCA. Furthermore, how can the RCA be “geared up” in the future in order to better serve the Member States?

3. RCA – TOWARDS BECOMING AN ENTERPRISING ORGANIZATION

3.1. Historical Perspective

Prior to the establishment of the RCA in 1972, participation of the IAEA in nuclear activities in the developing Member States was mainly focused on providing support in capacity building programmes. Bilateral co-operation with the IAEA was designed as **Technical Assistance** in form of expert services, special equipment, and special support to strengthen necessary national infrastructure (radiation protection, legislation etc.), and human resources development.

The establishment of the RCA 30 years ago under the aegis of the IAEA opened new opportunities and advantages for the individual Member States and the Asia-Pacific region as a whole. The IAEA can then provide two types of technical assistance/co-operation programmes, one focused to meet the needs of the individual Member States, the other designed to meet common needs of the participating countries in the region. In addition, the RCA provides opportunities for sub-regional technical co-operation (e.g. TCDC – Technical Co-operation among Developing Countries, and ECDC- Economic Co-operation among Developing Countries) among the Member States.

Thirty years have passed since the RCA; the Regional Co-operative Agreement was concluded under the auspices of the IAEA. The Agreement stipulates unambiguously that the Member States undertake, in co-operation with other and with the IAEA to **promote and co-ordinate research, development (R&D) and training projects in nuclear science and technology** through appropriate national institutions. The so-defined **mission** of the RCA was thus **very specific** and its **types of activities** were consequently **very limited**.

On the basis of the Agreement it is then logical to conclude that the RCA activities are expected to give the following output:

- **New scientific results** obtained through scientific researches,
- **New technologies or improved but old technologies** obtained through technology development activities, and
- **Personnel with better skills** as a direct result of training activities.

Benefits (outcome) of the RCA output were, however, at the beginning not seriously questioned, their impact on the social-economic condition in the participating Member States were not systematically studied. In the course of time, the RCA environment has changed significantly since 30 years ago, the stakeholders have become more critical and their demands as well as expectations have grown

considerably. A new and critical look at the RCA is needed.

3.2. Towards a New Agreement?

It seems clear that the Agreement, as in its present form, can no longer be sustained in the future. The activities must not be necessarily directed getting new scientific results, new technologies and better skilled personnel, but should be stronger oriented towards **solving** specific scientific or technical **problems** associated with the regional or national development of the participating Member States. Furthermore, the activities **need not be focused on the end-users** of the **nuclear-based technologies** to obtain **high social-economic impact** in the society.

In order to be more successful in the future, especially in drawing the resources of the IAEA Technical Co-operation Department, the RCA programmes and activities will have to be designed to address the **real needs** of the region, provide **cost-competitive** nuclear based solutions to the development problems. The RCA needs to further **improve its image** in the region through activities oriented towards achieving better awareness, better understanding, higher appreciation of the society on the benefits and risks associated with nuclear based technologies. The RCA is thus expected in the future to be more sensitive and responsive to the needs of the society, and able to provide cost effective nuclear based solutions. **In short, the RCA needs to transform itself from a technology driven to a demand driven organization, and thus operate as an enterprise endeavoring to achieve customers' satisfaction.**

***Recommendation No. 1:** The RCA Agreement needs to be reviewed and revised to satisfy the changing needs of the customers.*

3.3. New Paradigm? RCA - an Enterprise in Quest for Customers' Satisfaction

What products can the RCA produce in a **cost competitive** way, who are the potential **customers**, who are the **partners** or **competitors**, and finally how can the RCA achieve optimal **customers' satisfaction** and thus win the competition? These are some of the basic questions that need to be satisfactorily answered by the government of Member States as the stakeholders, if the RCA wants to stay relevant and become more successful in the future.

Who are the customers and what do they need? The customers are the potential users (end-users) of the **RCA products**, and the products that they need may be categorized as:

- **Information packages** on various aspects nuclear science and technology for the benefits of the customers.
- **Nuclear based technology packages** to be applied by the end-users for problem solving purposes.
- Special nuclear based **technical assistance** during the planning, implementation and monitoring and evaluation of specific activities.

The combination, nature and quantity of the above mentioned products should be designed to address specific priority problems where nuclear based solutions or partial solutions are expected to give cost effective intervention with high social-economic impact in the participating Member States. Depending on their needs, priorities and stages of development, the Member States can expect to derive **benefits** in form of:

- **Advancement of Knowledge**, through the acquisition of
 - ✓ New scientific results and /or strengthening of research activities in specific areas of scientific discipline;
 - ✓ New or improved technologies to be used as tools to solve problems in specific problem areas;
 - ✓ Direct experience through the establishment of demonstration or pilot plants;
 - ✓ Information on various aspects of development, utilization and dissemination of nuclear based technologies;
- **Strengthening of National Capacity**, through
 - ✓ Improvement of human resources in specific areas of expertise/skill;
 - ✓ Improvement of specific scientific or supporting facilities;
- **Improvement of General Awareness of**
 - ✓ **Decision makers** and the **general public** on the benefits and risks of nuclear science and technology
 - ✓ **Technology end users** and the **academic world** on the application, education and the R&D aspects of nuclear science and technology.
- **Technical Assistance** in solving specific problems associated with national or regional development.

Recommendation No. 2: *The question should no longer be what nuclear techniques can do for the society, but what problems of the society can be cost effectively solved by the application of nuclear based solutions with the highest social-economic impact. The RCA should no longer be technology driven, but driven by the real needs of the customers in the Member States and in the region. RCA must operate as an enterprise, driven by the market.*

3.4. Functions

To facilitate easy auditing and assessment of the RCA in the future, its roles or function should be defined clearly in the agreement. One can envisage that the RCA, through the implementation of its projects, perform among others the function:

- 1) As **facilitator** of:
 - Exchange of information and scientific personnel;
 - Specific and task oriented training and education;
 - Meetings between the nuclear technology producers, technology end-users and the targeted beneficiaries;
- 2) As **provider** of:
 - Information to interested parties;
 - Specific technical assistance: experts, special equipment, training, fellowships, ...
 - Specific demonstration/pilot plants;
- 3) As **producer** of:
 - Information on promotional and scientific aspects of nuclear sciences and technologies;
 - New scientific results in specific areas of nuclear sciences;
 - New nuclear techniques designed to meet the needs of the end-users;
 - Technical assistance: experts, special equipment, training, ...

Recommendation No. 3: *The Member States should clearly define the functions of the RCA and reflect these in the RCA Agreement.*

3.5. Fundamental Business Concepts

Having clearly defined the functions, the following basic business concepts should be properly formulated, agreed and pursued consistently in the future.

3.5.1. Core Business

- *Nuclear technology based solutions in the service of regional and national development*

3.5.2. Business Principle

- *Demand driven, End-user focused, Impact oriented, Cost-effective*

3.5.3. Mission:

- *To **promote application** of nuclear based technologies to solve specific development problems in the region and the individual Member States;*
- *To **improve the image** of nuclear science and technology in the society;*
- *To **strengthen regional and sub-regional networks** in the application, development and dissemination of nuclear science and technology.*

3.5.4. Vision

- *The RCA shall strive to become a respected Regional Resource Community in Nuclear Science and technology, competent and competitive in providing high impact solutions to development problems of the Region and the Member States.*

3.5.5. The Customers: who are they and what are their needs?

The **potential customers**, at the same time the **business partners**, of the RCA should primarily consist of technology end-users and institutions or agencies that employ technology end-users to solve specific problems for the end-beneficiaries.

The customers include

- **Decision makers** from the government or non-government agencies in need of solutions to specific technical problem. Of interest to these customers is primarily the information on the efficacy, cost-effectiveness, as well as resources necessary to apply nuclear based solutions;
- **End-user institutions/agencies/enterprises** wishing to apply nuclear based solutions to their problems or wishing to upgrade the knowledge and skill of their scientific-technical personnel or facilities in specific areas of nuclear science and technology;
- **Educational and training institutions** wishing to improve their

capacity and delivery of output in specific areas of nuclear sciences and technology;

- **Business enterprises** wishing to solve specific problems in their business activities.
- **Development or special agencies**, national and international (e.g. UNDP, ESCAP, FAO, WHO, UNEP) wishing to finance development projects involving solution to technical problems;

The above groups of institutions or agencies may need different combinations of product types, namely

- Information, guidelines, advice materials
- Technical tools: methods, equipment to support implementation of problem solving activities
- Technical assistance, such as expert services or special equipment in planning, implementation, monitoring, evaluation of problem solving activities

Recommendation No. 4 :

In the era of increasing competition, the success of the RCA should develop better strategies to:

- *Improve marketing of the RCA products*
- *Strengthen outreach to potential customers and partners*
- *Improve the design and delivery of programs*

3.6. Commitment of Member States

The RCA is fortunate to consist of Member States with a wide spectrum of technology and economic development, ranging from less developing to highly advanced. But the number and size of less developing and developing countries far outweigh the technologically developed ones. Given a large population size of well over 2 billion people, thus with a tremendous market potential, all RCA Member States have a vital interest for maintaining the political stability and the development of the economy in the Asia-Pacific region. Nuclear technologies can play a significant role in solving specific national and regional development problems, such as Agriculture, Health Care, Industry, Energy and Environment.

In order to improve the production and delivery of RCA products in the future, the Member States are expected to demonstrate a stronger commitment to

- Develop and strengthen **national networks** consisting of all relevant parties, namely the nuclear technology suppliers (National Nuclear

Institutes/Agencies), the technology end-users (direct RCA customers), the beneficiaries (target groups in the society), relevant government agencies and the education/training institutions.

- To provide cash and /or in-kind **contributions** to support the operation and management of the RCA activities.
- To ensure **active participation** in the design, planning, implementation, monitoring and evaluation of RCA activities.

The success or failure of the RCA is the collective responsibility of the Member States. Therefore they should work together as a team with sharing a common vision. Hence, the issues such ownership and management of RCA programmes should no longer arise in the future. The RCA programmes must, **of course**, be owned, initiated, designed, implemented and managed by the participating parties in the Member States. The IAEA should play its role as a partner, mainly as the provider of secretariat services and special resources whenever necessary.

4. ENVIRONMENT OF THE RCA

Management of the RCA interactions with its environment, in particular the ability to take advantage of environmental changes constitutes a key success factor of the RCA. Some of the institutions that need particular attention include the following.

4.1. Atomic/Nuclear Based Organizations

- **The IAEA (International Atomic Energy Agency)**

The IAEA so far is the most important partner of the RCA. Successful interactions with the IAEA, in particular to obtain funding and other support, need to take into account the development of policies and strategies of the IAEA. In particular, the IAEA no longer presents itself as a technical assistance agency, but instead as “**partner in development**”. As a consequence, the **Technical Assistance Projects (TA-Projects)** have become **Technical Co-operation Projects (TC-Projects)**, thus emphasizing the partner role of the IAEA.

Furthermore the IAEA requests that those TC-Projects submitted for the IAEA support must satisfy the so-called “**Model Project**” criteria, which emphasizes the requirement of the **genuine commitment** of the partner governments, recently known as the **central criterion**.

The area of priority addressed in the bilateral co-operation projects must be reflected in the national priority programmes. On top of that, the partner

countries are required to produce a document called “**Country Programme Profile (CPF)**“, which needs an endorsement of the IAEA.

The activities must be oriented towards solving priority problems in the partner countries, focused on the end users, the selected nuclear-based technologies must be cost effective and competitive, and the results are expected to produce significant social-economic impact.

If consistently implemented, the above stringent requirements of the IAEA seem to be an effective tool to ensure better design and implementation of projects that address the real needs and solve priority development problems in the partner countries.

***Recommendation No. 5:** The RCA should also incorporate the Country Programme Profile of the participating countries and other measures to improve the design and implementation of the RCA programmes.*

- **The FNCA (Forum for Nuclear Co-operation in Asia)**

The FNCA, spear headed by the government of Japan, along side the RCA is an important regional co-operation in the Asia-Pacific region. All countries participating in the FNCA are also members of the RCA, but not vice versa. . In view of this, the RCA should develop a synergistic partnership with the FNCA, both in the design and implementation of programmes and in matters concerning resources.

***Recommendation No. 6:** The RCA should develop a synergistic working relationship with the FNCA.*

4.2. General and Specific Development Organizations

Nuclear technologies can offer significant contributions in solving specific problems in many areas of national and regional development programmes, such as agriculture, health care, industry, energy and environment.

On the hand, there are national, regional and international agencies and institutions, which are specifically created to deal with those specific areas of development.

At the national levels there are special government ministries or agencies, as well as non-government organizations. The Member States should strengthen national synergy among the nuclear technology suppliers, technology end-users and the potential beneficiary organizations.

At regional and international levels the potential partner agencies include:

- **UNDP** : United Nations Development Programme
- **ESCAP** : Economic and Social Commission for Asia and the Pacific

- **FAO** : Food and Agriculture Organization
- **WHO** : World Health Organization
- **UNEP** : United Nation Environmental Protection
- **IMO** : International Maritime Organization

The initiative made by the RCA in convening a “**Consultative Meeting on Enhanced Awareness and Co-ordination among International and Regional Organizations in the Asia-Pacific Region**” in conjunction with the National RCA Representatives Meeting in Dhaka, Bangladesh, in March 2001, needs to be followed up with further concrete actions.

Under the principle “**common but differentiated responsibilities**” (ESCAP Ministerial Conference on Environment and Development in Asia and the Pacific, Kitakyushi, Japan, September 2000), the RCA should make its best attempt to strengthen its links and collaboration with the regional and international organizations. The RCA should offer cost-competitive nuclear-based technologies to solve specific development problems.

***Recommendation No. 7:** The RCA should pursue its effort to develop synergistic co-operation with the regional and international organizations, and thus actively participate in the regional development under the principle “**common but differentiated responsibilities**”, **united in aim but diversified in tools**.*

5. RCA IN OPERATION

5.1. Basic Principle

To ensure higher social-economic impact and to attract more participation and support of the potential partner organizations, the RCA programmes of activities should be focused on how to satisfy the needs of the technology end-users for the benefits of the targeted beneficiaries. The programmes should be consistent with the policy and strategy of the partner organizations, and should be aligned with the priority needs of the participating Member states.

The RCA programmes should be streamlined into a **few thematic areas**, each consisting of mutually strengthening sub-areas, and designed with to achieve **short term, medium term and long term targets**, consistent with the efforts to **transform the RCA vision into reality**.

The RCA projects, primarily at the **conceptual phase**, should thus be designed collectively by the representatives of the Member States’ governments, the IAEA, the end-user and partner organizations. This upstream work preferably should be delegated to the **Advisory Groups** consisting of senior representatives of the aforementioned organizations/agencies. This group should define the **general**

direction, priority areas and major targets (primarily medium and short-medium terms) of the RCA programme in a specified thematic area.

***Recommendation No. 8:** The RCA programme of activities should be streamlined into several thematic areas, each with a special mission to solving specific priority problems in the region and in the participating Member states.*

***Recommendation No. 9:** For each thematic area there should be an Advisory Group consisting as far as possible of representatives of Member States, the IAEA, the technology end-users, participating organizations and groups of beneficiaries.*

5.2. The Programme

As mentioned above, in the future the RCA programme should be streamlined into several Thematic Areas (TA), each targeted towards solving specific and priority problems. The following themes may be considered to be included in the thematic classification scheme.

5.2.1. TA – 1: Basic Human Needs

- Agriculture
- Water Resources
- Health Care

5.2.2. TA – 2: Economic Development Needs

- Industry
- Specialized materials
- Natural Resources (geothermal sources, ...)

5.2.3. TA – 3: Environmental Care

- Environmental Degradation
- Pollution Management (Air, Water, Marine, Coastal Areas)
- Waste Management

5.2.4. TA – 4: Strengthening of Infrastructure

- Radiation Protection
- Legislation
- Safety, Safeguards and Control

5.2.5. TA – 5: Nuclear Power

- Assessment of Power Resources for Sustainable Development
- Nuclear Power in the National Energy Supply Scheme
- Power Reactor Technology and Fuel Cycle

Recommendation No. 10: *Existing projects, especially those with emphasis on facilities (such as research reactors, accelerators, ..) should be either be phased out, or incorporated into thematic areas.*

5.3. Scope of Activities:

The activities in each of the thematic areas should be designed to support different development stages and priorities of the Member States suggested as follows:

5.3.1. Problem Solving (PS)

- Provision of Information on design, planning, implementation, monitoring, control or evaluation of programme activities
- Provision of specific and task oriented Technology Tools
- Provision of specific Technical Assistance, such as expert missions, special equipment, training, fellowships, ..

5.3.2. Capacity Building (CB)

Capacity building component of the RCA projects should constitute an integral part of efforts towards finding a comprehensive solution to specific problems.

- Upgrading of human resources
- Improvement of specific task-oriented scientific facilities
- Improvement of supporting infrastructure

5.3.3. Research, Development and Demonstration (RDD)

Similar to CB activities, scientific research on specific topics, development of specific technology or demonstration of specific pilot plants may be performed in support of specific problem solving activities.

5.3.4. Image Building/Improvement

Image building/improvement campaigns should constitute an important of the RCA activities. These should conducted for different target groups aimed at achieving the following objectives:

- To increase public awareness and understanding of the benefits and risks associated with the application of nuclear technologies;
- To attract the interest, appreciation and support of the decision makers, educational and training institutions to study, disseminate and to promote nuclear science and technology;
- To attract end users to apply nuclear techniques in solving problems.

Recommendation No. 11: *Each RCA project should be focused on problem solving and may contain capacity building, RDD and Image Improvement components in accordance with the needs of the Member States.*

5.4. Scope of Resources

Five years have passed since the document “**RCA in the Next 25 Years**” was prepared. At that time the RCA was expected to grow into a Regional Resource Community in nuclear science and technology with a wide spectrum of capability highlighted by the availability of Regional Resource Units distributed in many Member States of the region. Significant development has taken place since then, in particular with respect to the resources.

- **Scientific-technical resources**

The availability of scientific-technical resources, namely scientific facilities and competent personnel, especially those institutes, laboratories or scientific units that have reached the standard “**Regional Resource Units (RRUs)**” constitutes the backbone of the RCA.

The RRU concept was introduced in the RCA several years ago. However, the growth of the RRUs has been rather slow; special attention needs to be given to promote a faster development of the RRUs, especially in the developing Member States.

The available major scientific facilities in the region, such as research reactors, electron and ion accelerators, synchrotron radiation facilities have not much been incorporated into the RCA activities as tools to solve specific problems. Efforts should also be targeted to develop and use those major scientific facilities for the benefits of the RCA Member States.

Recommendation No. 12: *The RCA should make a collective effort to increase the number of the RRUs in the region, especially in the developing countries.*

- **Managerial resources**

Better management of the RCA programme needs better utilization and strengthening of the management resources, namely the Advisory Groups (AG), Lead Countries and the forthcoming RCA Regional Office (RO).

For some thematic areas the AG has demonstrated its important contribution as the “**basic architect**” in formulating the **Conceptual Proposal** of the thematic programme.

The formulation of detailed **Technical Proposal**, including **Logical Framework**

Matrices (LFM), is the task of the **Lead Country Coordinators (LCC)** in collaboration with the **National Project Coordinators (NPC)**. The Lead Country concept has proved to be very useful, not only for the improvement of project management, but also to induce the Member States into taking a more active participation in the RCA activities.

Outreach towards potential partners in the region, such as those aforementioned organizations, has so far been very limited. The new **RCA Regional Office** should significantly be used to strengthen the outreach effort, and thus opens a greater possibility to make a proactive approach to the potential customers and partners, especially the regional and international organizations.

Recommendation No. 13: *The Lead Country Concept and its implementation should be improved. The forthcoming RCA Regional Office should assigned the task of “**project hunting**”, by approaching the potential customers, identify their problems, analyze their needs, and propose attractive and cost-effective nuclear-based solutions for a price. Future motto: **Donors Yes, but Customers Better!***

- **Financial resources**

Apart from the financial contribution from the UNDP, the RCA so far only enjoys the sources of funding from IAEA and the Member States. But the IAEA as the major contributor has been experiencing increasing financial difficulty due to decreasing contributions from the major IAEA donor countries. In view of this, the funding sources of the RCA should be diversified; new business like initiatives should be intensified in order to attract funding from the potential donor, or preferably, customer organizations.

As a problem solving organization offering cost-competitive nuclear-based solutions, the RCA, primarily through its Regional Office, should approach the potential customers, identify their priority needs and problems, make a proper analysis, and then propose an attractive and cost-competitive solution using the motto “**you have tough problems, we have attractive solutions**”.

The RCA should in the future offer good quality products to potential customers at a price! Increasing portion of the RCA funds should come from the “**sale**” of good products to customers. Thus the financial contributions from the IAEA and the Member States should serve more as catalysts to attract major funds from the potential customers. The terminology “donor organizations” should thus be gradually replaced by “RCA customers”. The customers do not give donation, but instead are willing and happy to pay RCA for its satisfactory products! Hence, the RCA must increasingly operate as business enterprise in the future. **The RCA loses its “raison d’etre” once its products or services are no longer needed by the market/customers!**

Recommendation No. 14: *The RCA sources of funding should be diversified; new*

business like initiatives should be intensified in order to attract funding from the potential donor, or preferably, customer organizations.

6. CLOSING REMARKS AND SUMMARY OF RECOMMENDATIONS

In this an attempt has been made to review the existing principles and mode of operation of the Regional Co-operative Agreement (RCA), and recommendations have been made wherever considered appropriate.

Central to the recommendations is the need to change the RCA paradigm: in the future the RCA should gradually be transformed into an enterprising organization, under the motto “**Donors Yes, but Customers Better**”.

Summary of Recommendations:

Recommendation No. 1: *The RCA Agreement needs to be reviewed and revised to satisfy the changing needs of the customers.*

Recommendation No. 2: *The question should no longer be what nuclear techniques can do for the society, but what problems of the society can be cost effectively solved by the application of nuclear based solutions with the highest social-economic impact. The RCA should no longer be technology driven, but driven by the real needs of the customers in the Member States and in the region. RCA must operate as an enterprise, driven by the market.*

Recommendation No. 3: *The Member States should clearly define the functions of the RCA and reflect these in the RCA Agreement.*

Recommendation No. 4 : *In the era of increasing competition, the success of the RCA should develop better strategies to:*

- *Improve marketing of the RCA products*
- *Strengthen outreach to potential customers and partners*
- *Improve the design and delivery of programs*

Recommendation No. 5: *The RCA should also incorporate the Country Programme Profile (CPF) of the participating countries and other measures to improve the design and implementation of the RCA programmes.*

Recommendation No. 6: *The RCA should develop a synergistic working relationship with the FNCA.*

Recommendation No. 7: *The RCA should pursue its effort to develop synergistic co-operation with the regional and international organizations, and thus participate in the regional development under the principle “**common but differentiated responsibilities**”, united in aim but diversified in tools.*

Recommendation No. 8: *The RCA programme of activities should be streamlined into several thematic areas, each with a special mission to solving specific priority problems in the region and in the participating Member states.*

Recommendation No. 9: *For each thematic area there should be an Advisory Group consisting as far as possible of representatives of Member States, the IAEA, the technology end-users, participating organizations and groups of beneficiaries.*

Recommendation No. 10: *Existing projects, especially those with emphasis on facilities (such as research reactors, accelerators, ..) should be either be phased out, or incorporated into thematic areas.*

Recommendation No. 11: *Each RCA project should be focused on problem solving and may contain capacity building, RDD and Image Improvement components in accordance with the needs of the Member States.*

Recommendation No. 12: *The RCA should make a collective effort to increase the number of the RRUs in the region, especially in the developing countries.*

Recommendation No. 13: *The Lead Country Concept and its implementation should be improved. The forthcoming RCA Regional Office should assigned the task of “project hunting”, by approaching the potential customers, identify their problems, analyze their needs, and propose an attractive and cost-effective nuclear-based solution concept at a price. **Donors Yes, but Customers Better!***

Recommendation No. 14: *The RCA sources of funding should be diversified; new business like initiatives should be intensified in order to attract funding from the potential donor, or preferably, customer organizations. <A.Djaloeis, BATAN, Indonesia - February 2002>*