

# AAINews

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## **Recollecting Syria in Uzbekistan – The Importance of Regional Co-operation**

I had a chance to travel to Uzbekistan in central Asia. My visit had two purposes; to attend the FAO organized workshop and to conduct a survey on the country's agricultural situation. The workshop was held in the capital, Tashkent, and lasted for 5 days from July 7 to 11. The workshop proceedings were focused on a presentation about the on-going FAO project and its achievements so far, presentations by participating countries on their country reports, and field trips and group work to develop recommendations for the project. The second week of my trip was used to collect information from related organizations in order to investigate potential areas of future agricultural co-operation.

To sum up the characteristics and problems of agriculture in Uzbekistan, the main crops are cotton and wheat grown under irrigation and the country is facing problems such as soil salinization and deterioration of irrigation facilities. Ninety five percent of farming land is irrigated and there would be no agriculture without irrigation in Uzbekistan. Uzbekistan's climate is arid with scarce rainfall and people are dependent on water resources from the Amu Dar'ya and Syr Dar'ya Rivers. During the time of Soviet administration, irrigation canals were established and they remain in use today despite being beset by many problems.

Given this situation, some of the most urgent issues are implementation of anti-salinization measures, rehabilitation of old irrigation systems and mobilizing of financial resources from donor countries for these critical activities. At the same time, the wish list includes the introduction of advanced technologies and provision of equipment. However, obviously financial assistance and introduction of latest equipment alone cannot solve all the problems. These "hard" forms of assistance need to be accompanied by "soft" elements such as human resources development and the introduction/transfer of skills. There are many ways of utilizing Japan's past experience in this soft type co-operation. One example is training in cultivation techniques for vegetables, fruits and rice. Another example is the formation and running of water users association to maintain/manage irrigation facilities. In addition Japan could transfer its know-how in the field of farmer support organizations such as agricultural co-operatives and agricultural extension centers.

What I felt strongly this time was the importance and effectiveness of "regional cooperation", i.e. regional exchange between experts and C/P. There are many things in common between Uzbekistan and Syria. To take some examples, both countries have very hot dry summers, produce a large amount of fruits and vegetables, hold vast wheat and cotton fields, are negatively affected by the former Soviet planned economy, and both have a strong "top-down" system. It is extremely useful to exchange knowledge and experiences between the two countries. It may be possible to transfer experience and technologies of Syria to Uzbekistan and other central Asian countries, and vice versa. There are also many similarities between Uzbekistan and neighbouring nations such as Afghanistan, Pakistan, Egypt and Iran. Regional exchange and technology transfer between these countries will be highly beneficial in terms of problem solving and human resource development.

For millennia, since the time of the silk road, Uzbekistan has been the route of many travelers. The country has also historical relationships with Syria, having sent technicians and labourers for the construction of irrigation systems in Syria while the country was receiving support from Moscow. Exchange between experts in various fields would lead to improvement of existing technologies and would yield new ideas. This will in turn lead to more meaningful technical co-operation.

(By Koto in Uzbekistan, 2003 November)



**Watermelons at a bazaar**



**An experimental plot at a rice research center**

## ***"Human Resource Development"- Our Challenges in Training Activities***

### **Part 2 Training work at the Tsukuba International Center**

As introduced in AAI News Vol. 37 and 39, AAI has been putting a lot of effort into training activities, in order to utilize experience gained in developing countries into training works and at the same time to utilize experience in training into field works in developing countries. At the Tsukuba International Center, AAI has conducted courses on vegetable cultivation for Tajikistan and southern African countries. The objective of these courses is to nurture capacity building of human resources that will contribute to agricultural promotion in the particular country or region through technical training on vegetable cultivation for researchers and technicians who have been involved in agriculture research and extension activities. The main content is a series of technical training sessions ranging from formulation of plans for cultivation experimentation to practical training such as cultivation techniques, growth observation and compiling results of the experimentation. The curriculum is designed so that participants can absorb a wide range of technologies that can be applied in their own countries, including the acquirement of basic knowledge through lectures and field visits to local farms. In addition to teaching, it is also an important responsibility for us to select participants, to create training curricula, and to arrange various lectures, practical sessions and field visits. Both courses lasted for 4-5 months, however were conducted in different seasons. This meant that it was necessary to carefully consider our choices of vegetables and field visit sites.

One problem we faced was that participants had different levels of basic knowledge and language proficiency, and some would have problems fully understanding lectures. We conducted a benchmark test at the beginning of the courses in order to grasp individual levels of ability. The test results were communicated to the trainees at an early stage so that they would know their own level in order for them to develop individual objectives. What we felt strongly through the training was that trainers need to continuously study harder than the trainees. By doing so, trainees will feel their teacher's sense of passion. The sense of achievement on the part of the trainees is the same as that felt by the trainers; i.e. they are two sides of the same coin.

From this year, one of the evaluation criteria for the course is to what extent technologies that are applicable to participants' countries are taught. Practical work is conducted using materials prepared by trainers. However, it is necessary for trainees to acquire knowledge and skills enabling them to apply the newly gained technologies in their own countries, using materials obtainable in their countries. For instance, how would one judge the physical and chemical properties of soil that is obtainable for raising seedlings by soil block? How would one extract effective micro-organisms in order to create fermented fertilizers? How would one obtain nitrogen sources for making compost alternatives to chemical fertilizers and obtain materials other than straw? Mulching material can be grass, straw, leaves of bananas and dates instead of plastic sheets. Can we also use these materials for preventing drought, weeds and top soil run off and for controlling ground temperature? In this way it is important to tell the trainees about our experience in different countries and support their eagerness when they are trying to think of ways of applying skills and technologies they acquire in the course.

Our training session that fully utilizes experiments and practical work was very well received by the participants. In particular, they valued lectures and practical components at local farms, saying that they had a very unique opportunity to experience something they cannot do in their own countries. However, it tends to be time consuming to try to harness trainees' understanding through practical work as the core of the training curriculum. It is important to cater for participants with varied levels of experience and knowledge and to foster mutual understanding between trainers and trainees. Moreover, in order to conduct training that relates to different situations in the trainees' countries it is necessary for trainers to have sufficient techniques on hand to draw the connections and for the training session to have enough time. It may be beneficial to establish a "gathering hole" where trainees can go freely to meet trainers to discuss issues and concerns. This would increase the amount of time trainees and trainers can have to interact and help them foster their relationships. AAI is determined to continue offering high quality training, emphasizing technology that can be applied to developing countries, and valuing good relationships with each trainee.



**Visit to grafting workshop**



**Learning different tomato cultivars**



**Visiting an organic farm**

## ***Lessons Learned from Mangrove Ecosystems***

### **Part 2: Importance of Mangrove Ecosystems in Asia, Middle East and East Africa**

It is impossible to discuss Oman's history without mentioning the Indian Ocean trade activities that extend all the way from India to East Africa. This extensive trading network uses the northeastern monsoon of winter to sail from India to East Africa, and the southwestern monsoon of summer to return in the opposite direction. Trade activities reached as far as Zanzibar. Agricultural produce of Oman (crops, fruits and dates) and frankincense, as well as fabrics, copper ware and glass wear imported from India and China were traded for gold, ivory, fur, ebony, hard charcoal and teak. At one time, Omanis had a complete monopoly over trading activities in this area. Omanis not only had a wealth of information regarding sea routes and had a high-level of navigation technology, but also excelled in ship building. The sailor Sinbad in the Arabian Nights is said to have come from the port of Sur. Given that the old name of Sur meant two mangrove trees, mangroves must have been abundant in the area in those days.

The relationship between the trading activities and mangroves is not clear. However it is possible that mangroves were used as a material to make dhows, to create tannin to strengthen ropes and sails, and to make coating materials to protect the hull. Most of the mangroves occurring in Oman are *Avicennia marina*. There is a record of boiled branches and leaves being used as medicine. This medicine might have helped the sailors to stay healthy. In 2001, a team of Italian archeologists uncovered a fossilized boat. Apparently, the framework of the boat was made of *Avicennia marina*. At present, existing mangrove forests are utilized as nature reserves and coastal recreation areas. In Salalah, until recently, mangrove leaves were used as fodder for camels and seeds are given to camels and mountain goats to produce high quality milk. Mangrove crabs and mangrove oysters fetch high prices at markets and therefore are often illegally caught. On Mahut island, fishermen move to coastal areas from the inland during the fishing season and erect temporary shelters made with the straighter boughs of *Avicennia marina*.

On Zanzibar Island in East Africa, *Avicennia marina*, *Rhizophora* and *Lumnitzera racemosa* are seen. *Avicennia marina* is mainly used for building canoes, supporting materials for boats, handles of farming tools and for fuel. *Rhizophora* has high utilization value as material for pillars as straight lengths of wood can be obtained from the plants. Aerial roots are used for making fish traps. As it is, mangroves have been used for many purposes since long ago in the area extending from India to East Africa. Mangrove habitats are within the ecotone between the sea and land. The ecotone is affected both positively and negatively from the sea and land and is an ecosystem that exists on a fine balance. This means that the ecotone is vulnerable to development activities and therefore designated as a particularly important ecosystem to consider in environmental impact assessment processes. We can also understand the importance of mangroves in production activities, given that mangrove ecosystems play a highly important role in nurturing fishery resources, and that mangroves have been used as an important source of fodder for livestock in coastal areas. Furthermore, in recent years, there has been an increased interest in developing beach resorts for recreational fishing and scuba diving. Restoration of natural sceneries by means of mangrove plantation in coastal areas can play a role in resort development. It is expected that the economic value of mangrove ecosystems will increase as years go by. It is necessary to evaluate the values accurately in each locale for development and to formulate future plans based on a sound environmental evaluation.



**Use of mangrove by camels in Salalah**



**Temporary shelter on Mahut Island**

## *Global scale environmental measures – reduction of green-house gas emissions*

### **Part 1: The Kyoto Protocol and Kyoto Mechanism**

Between 1760 and 1994, CO<sub>2</sub> concentration in the air had risen to 358ppmv from 280ppmv. Since the 19<sup>th</sup> century, the world's average temperature has increased by 0.3-0.6 degrees and the sea level has risen 10-25 cm. According to the IPCC it is predicted that, by 2100, the temperature will have risen by 1-3.5 degrees and the sea level by 50 cm. Presently, 6.2 billion tons of CO<sub>2</sub> (in carbon) is emitted into the air every year.

In 1994, at the first Conference of Parties (COP1) for the United Nations Framework Convention on Climate Change, which was called the Climate Summit, indicators for green house gas reduction were agreed. The Kyoto Protocol, which was adapted at the COP3 in 1997, set numerical green house gas reduction targets for developed nations. For example, it was decided that Japan should reduce the emission by 6%, based on the amount in 1990; i.e. a reduction of 5.796 billion tones in carbon between 2008-2012. In order for the Protocol to enter into force, it is necessary for at least 55 countries to join the Protocol and the reduction amount of developed nations that join the Protocol must exceed 55% of the total CO<sub>2</sub> emission of all the developed nations. As a result, the Kyoto Protocol has not entered into force as yet. In order to achieve the reduction target the “Kyoto Mechanism” based on the market principle was introduced. This mechanism includes a joint implementation (JI) aiming to foster co-operation among developed nations to achieve the agreed reductions, and the “Clean Development Mechanism” (CDM). CDM allows the developed nations to achieve a certain amount of reduction by financially assisting developing nations in reducing their green house gas emissions. Emission trading is another measure under the Kyoto Mechanism which enables the developed nations to trade amounts of reductions.

CDM projects could be joint afforestation activities between developed and developing nations, methane gas power generation using biomass and wastes, and implementation of various measures for energy saving. Any CDM projects must be approved by the CDM boards of directors. In order for a CDM project to go ahead a proposal must be formulated and endorsed by the two nations concerned and a project must be registered. Monitoring systems must be established and emission reduction credits must be issued and allotted to the two countries.

CDM projects could contribute to the development of industries and the improvement of peoples' livelihoods. They could create new energy sources by effectively utilizing local resources that were wasted or unutilized in the past. They could also yield timber products for local people and fix CO<sub>2</sub> through afforestation in degraded land areas. CDM's direction corresponds well to regional development based on key phrases such as resource management, sustainable development and environmental conservation, all fields which AAI has been working in. In addition, joint project implementation in developing countries could also contribute to technology transfer. In the past, individual projects tended to look at regional environment and resource utilization, however, we are increasingly expected to develop projects that also address global concerns such as reduction of green house gasses. We need to recognize that the Earth has stepped into a critical stage so that we have no choice but ensure that not only local areas benefit but that also the global environmental benefits and impacts are considered. With this scope, the next issue will examine projects that AAI has been involved in, from the viewpoint of green house gas reduction.



**Slash and burn field on Sumatra Island, Indonesia**



**Forests on peat bog on Sumatra Island**