

# AAINews

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## International Cooperation Possible with US\$ 261

In January 2005 I arrived in the semi-arid Zvishavane area in the southern part of Zimbabwe after an 8-hour bus ride from the capital, Harare. The main purpose of this visit was to investigate the progress of the Seed Loan Programme implemented by the local NGO Zvishavane Water Project (ZWP) with support from the Muscat Fund, which is our private assisting fund. As introduced in AAI News Vol. 28, 29, 36 and 38, the ZWP has been operating a number of water security/utilization projects at the community level in semi-arid areas. Its projects range from the construction of small/medium scale dams to support for collective vegetable cultivation called group gardens and kitchen gardens, to the collection/utilization of rainwater and soil/water conservation.

During this trip, I visited four group gardens and my findings include the following. For the last 2 years, the ZWP selected crops such as tomatoes, butter nuts (a kind of pumpkin) and sugar beans (a kind of pulse) as suitable vegetables for group gardens. Under the Seed Loan Programme, the ZWP has been providing an interest-free loan to 20 group gardens with 1,744 members to enable them to purchase vegetable seeds. It has also been providing technical advisory services. Farmers are obliged to pay back their loans after harvest. Although some group gardens may repay the money slightly late, to date there have been no un-recovered loans and the ZWP has been able to sustain the services without reducing its original capital. Assuming each member has an average family size of 5, at least 8,720 people have benefited from this loan scheme. Our interviews revealed that revenue from vegetable sales is used for education, medical expenses and purchase of furniture and other materials for the households. Some groups have formed a mutual financing group that operates during harvesting time. In this way, a new system of larger loans seems to have started functioning. Furthermore, farmers have started co-operative shipments of vegetables.

Despite its success, the loan system has been severely affected by the serious inflation rates. The amount of original capital of the loan scheme is 297,000 Zimbabwean Dollars, which is only US\$ 48 at the present official exchange rate. The ZWP has not been able to pay for fuel for vehicles nor expand its services to new groups that are also needing loans. The ZWP has been investigating the possibilities of increasing the original capital in order to extend loan services to an additional 16 group gardens and 50 kitchen gardens. Rather than just increasing the amount to purchase seeds, the organization was also feeling the need to increase the fuel budget and make a contingency budget in anticipation of further inflation. I asked the organization to estimate the necessary amount to realize its plans. The answer was US\$ 261. Judging from the past achievements we were convinced that this small amount would be used effectively by the members and agreed on further support from the Muscat Fund. I feel that we will be able to make much bigger contribution with this small amount of US\$ 216.

The ZWP established an experimental farm and started a seed harvesting project, collecting from all over the country Open Pollinated Varieties (OPV) of crops such as maize, tomato, okra and pumpkin. A ZWP staff member told me that seed cultivation is important as it is not possible to continue to indefinitely provide seeds to farmers under the Seed Loan Programme, and it is necessary to accumulate seed cultivation techniques and pass them on to the farmers. The ZWP also requested AAI to assist the technical corporation for seed cultivation and vegetable cultivation. I hope that with our support the ZWP will eventually lead to some ZWP members participating in the Special Course on Vegetable Cultivation Techniques for the Southern African Region organized by JICA in Tsukuba, resulting in human resource development for the organization and the country. Through this trip, I strongly felt that our small but continuous support for ZWP activities, which directly supports farmers helping them to gain skills and confidence without relying on the government, is the quickest way for realizing the farmers' self-reliance.

By Ono (January 2005)



Lively women members  
the right) and Project Officer Mr. Clever Khumalo (right).



Core staff of ZWP: Director MS Irene Dube (2<sup>nd</sup> from

## New Series – Case Study of Use of GIS by AAI

### Part 1 – Introduction

We have been utilizing Geographic Information System (GIS) in our work both in Japan and overseas. We have also run a series on GIS in the past (Vol. 1-6), however, in this new series, we would like to introduce new experiences we have had and what we have learnt from them, as well as offering our advice when using GIS.

GIS is a database which links map information and statistical data. It enables us to efficiently conduct geographic (spatial) analysis. For instance, we can comprehensively understand characteristics of an area through visual presentations based on various themes describing situations in the area. GIS also enables us to extract areas that fall under certain conditions, and by overlaying various information, we can obtain new understanding.

We have been using GIS as a tool, making the full use of its characteristics and abilities. With GIS we developed development potential maps and land use planning maps in order to assist zoning of areas for formulation of regional development plans. We also developed a natural resource management ledger linking landscape photos with the soil and water quality data of an area. The following table indicates the main examples of AAI's GIS use in the past.

Country	Project	Example of GIS Use
Zimbabwe	Agricultural Development Study	Zoning by overlaying soil, vegetation, topography and other data.
Pakistan	Barrage Irrigation System Rehabilitation Study	Development of a land use map using remote sensing
Tanzania	National Irrigation Master Plan Study	Development of an irrigation potential map overlaying water resources, soil and socioeconomic data
Oman	Mangrove Resource Management Study	Development of a Data Base system linking remote sensing images of the mangrove sites, and results of site survey and monitoring
Syria	Development Project of Efficient Irrigation Techniques and Extension	Identifying priority project sites based on data such as irrigation area and ground water level

#### [Danger of over-reliance on maps](#)

As stated, GIS is a highly useful tool. However, as it can create very good looking maps, there is the potential for the results of a particular analysis to get out of hand. For example, although boundaries created through GIS analysis can be changed as a result of revision of criteria, data addition and updates, there is always a danger that people will see the GIS map as absolute and fixed. In addition, needless to say, the accuracy of data input in the GIS system is critical. If inaccurate information is used for analysis, wrong results can be generated. This threat is even greater in developing countries where it is difficult to obtain accurate and complete data. This also means that if one can obtain a large amount of accurate information it is possible to generate accurate and beneficial analysis. It is important to recognize that steady and accurate data collection is essential, a fact that tends to be overshadowed by the apparently showy maps GIS can produce.

#### [Don't rely on operators – keep the distance between data collectors and map creators short](#)

One of the problems people face in using GIS is that there is far too much distance between those who collect data and those who operate computer for the analysis collecting data. This problem is not unique to the GIS system but is also applicable to computer use for database management. For instance, in using the GIS system, the ideal scenario is that the same person collects, inputs and analyses data, and checks how the analysis is expressed on maps. In this way, eagerness for data collection increases, naturally leading to the higher accuracy of the collected data. However the real situation is that there is normally a GIS expert specializing in operating GIS software due to a clear division of work existing in many institutions. The specialized nature of GIS operators is exacerbated because of the development of increasingly technical GIS software and the high price of such software. It may not be realistic to hope that everybody should be able to operate modern GIS software which can perform multifunctional and high level analysis. Nonetheless, it is an important asset when using GIS not to completely rely on GIS operators. It is recommended that those who collect data in the field utilize GIS for some less complicated analysis. This should also lead to finding new effective ways for data use.

#### [Data sharing](#)

Another problem is that one cannot share data, even if a magnificent data system is created with GIS, unless counterparts or counterpart institutions possess the same software. One way of overcoming this barrier is to publish GIS data on the Internet so that a larger number of people can use the database.

## New Series: Changes in Pastoral Society in Syria and Resource Management

### Part 1: Sedentary of Nomadic pastoralists

Since the late 1950s increasing numbers of nomadic pastoralists have become sedentary in the north-eastern part of Syria. Before then the main part of this area called Jazira was rangeland inhabited by nomads migrating long distances. The only exceptions to this practice being a limited number of settlements in farming areas near the Khabur River and along the Turkish border. European travelers visiting the area from the 19<sup>th</sup> Century to the early 20<sup>th</sup> Century, were amazed by the sight of fertile lands being occupied by nomadic pastoralists.

The trend of increased settling of nomadic pastoralists since 50 years ago is not considered to be a result of external pressure exerted by national policy. Rather, it is considered to be a result of rapid agricultural development in the Jazira Plain, combined with the farmers' will to incorporate modern agriculture in their livelihoods. However, even though settlement meant building a permanent house and starting cultivation, it was effectively a primitive farming practice totally dependent on rainwater, and the crop was mainly barley and was no more than a small supplement to their main livelihood, which came from pastoral system. Therefore, given a changed environment of enlarged farming area and decreased grasslands, after trying a little bit of sedentary farming, the people might have assumed a new posture and adapted to a new style of pastoral system involving seasonal movement between farming area and grasslands.

What is pastoral system in the first place? The popular and principle definition is “mobile people who manage animal herds, assist their reproduction, and directly and indirectly utilize their milk and meat for living.” However in the real world, many different types of pastoral system exist. In addition, due to recent rippling effects of modernization, the variation of stock raising styles is even greater. Stock raising of pastoral system has been compounded with agriculture and other livelihood activities throughout history, which has created many different variations depending on the ratio of the mix. Their forms also clearly differ from “livestock farming” as an industry in developed nations in that their way of living is heavily influenced by farming practices in all corners of life. In Syria, urban dwellers often call nomadic pastoralists “Badw”. This name is often tinged with a feeling of petty contempt for those living in the difficult conditions of the desert, mixed with a sense of respect for (and fear of) anybody who can live in a harsh environment which is impossible for city dwellers to cope with.

So far, in AAI News, we dealt with Syria-related topics such as “Nature and Agriculture of Syria”, “Agricultural Extension”, and “Horticultural Therapy.” In this new series we focus on the Arabian tribe of Baqqara, living in the Abd al Aziz Mountains which are located roughly in the center of the Jazira Plain in Hasakah Prefecture. We will introduce their main livelihood activities such as livestock farming and rain-fed agriculture and their transition over time. By doing this, we would like to develop a systematic thinking on the way grazing lands are used and the problems the Baqqara face. In particular we are hoping to examine utilization of arid environment, from the view point of resource management in the grassland ecosystem, based on the environmental history of the Abd al Aziz Mountains.



Distant view of the Abd al Aziz Mountains



Baqqara tribesman and Bait Shaar (tent woven from black goat's fur)

## Mini Series: Sequel to “Designing Roots”

### Part 1: Progress after the Workshop

As we mentioned in AAI News Vol. 12, we organized a workshop titled “ Designing roots” in the summer of 1997. In the morning session of the workshop, we introduced the notion of “Designing roots” using a photographic database. In the afternoon we had a practical session using actual tools. The combination of theory and practice was very well received by a large number of participants. There were many requests by academic journals and TV programmes for contributions.

We introduced the idea of “Designing roots” and actual activities in arid regions in the journals and symposiums listed in the table below. In addition, recently, a book titled “Root Design: food and environment created by roots,” was published by Japanese publishing named Yokendou, and this includes a section called “Greening of desert and root system growth” which summarizes our activities. Furthermore, our activities were broadcasted to the world through NHK’s satellite broadcasting.

Journal/TV Programme etc	Timing	Summary
“Root Research” Issue 6, Vol.3 Japanese Society for Root Research	Sept. 1997	Introduced the idea of designing roots, with the theme “new approach for tree planting in arid land.”
“Journal of the Japanese Society of Revegetation Technology, Issue 23, Vol 1 Technology Materials	Sept. 1997	Introduced AAI activities in the UAE, with the theme of introducing water saving tree planting techniques in arid area using long root cultivation.
“Green Age” Spring 1998, Japanese Greenery Research and Development Centre	Jan. 1998	With the theme of root system of trees for planting and nursing techniques, introduced nursing and planting technologies for long root saplings.
The Japanese Society of Revegetation Technology: Research Summary	April, 1998	Introduced our activities regarding long root cultivation and dew pit irrigation at a “sustainable tree planting” research committee meeting
NHK BS 2: Japan This Week	May, 1999	With a variety of footage, introduced “Sahel-no-mori (Forest of Sahel)” activities in Mali and applications of long root cultivation techniques.
Forest Consultant No 80, Society of Forestry Technicians	Jan. 2000	Introduced tree planting techniques in arid areas, focusing on the reality of many areas with highly limited materials.
Homepage of “Designing Roots”	Oct. 2001	“Living in arid area”, “Basics of thinking”, “From seeds to nature” at <a href="http://www.open-resource.org/rootdesign/index.html">http://www.open-resource.org/rootdesign/index.html</a>
Poster exhibition at the 6th Symposium of the International Society of Root Research	Nov. 2001	Introduced our activities and achievements at the poster exhibition “Root: Dynamic Interface Between Plant and the Earth.”
Root Design: Food and Environment Created by Roots, Yokendou	Nov. 2003	Root design: food and environment created by roots

As shown above, we have been widely introducing the concept of “Designing roots” making the most of various opportunities, while continuing with activities that aim to devise practical applications of this concept. What has become clear through these activities is that with normal saplings, one can achieve the same effect as long-rooted saplings, as long as there are the right conditions for roots to grow. In other words, if one plants normal saplings in the soil which allows their roots to grow to a certain depth, the same results can be obtained as with long-root saplings. In addition, we now have the possibility of planting very young saplings. When nursing long-rooted saplings, germination stimulated seeds are planted in plastic pots and then small saplings are transplanted to pipe-shaped pots. Even small saplings can be directly planted, as long as the selection of the planting location, pre-planting treatment and post-planting management are adequate and one can expect quite a high rate of survival.

Since the workshop, we continued to learn a significant amount through nursing long-rooted saplings and developing planting techniques, applying the techniques to afforestation activities in the field and dissemination of the results, as well as through trials and errors. In this new series, we will introduce a number of experiences in the field in development and dissemination of appropriate technology following planting of long-root saplings. We will also investigate the possibilities of application for afforestation activities in degraded lands around the world.