

## VIEWPOINTS, PERSPECTIVES OR LETTERS TO THE EDITOR

### Introduction to section

In line with international trends, the SAJEMS editorial board decided to introduce a section in the journal called: *Viewpoints, perspectives or letters to the editor*. We solicit submissions to this section that comprise novel concepts, ideas, or even a dialogue with either the editor or an author of an earlier paper either in SAJEMS or elsewhere. Controversial perspectives are even welcome, as long as they are presented in a constructive manner.

Submissions to this section are likely to be shorter than a conventional manuscript, varying from 1 page to approximately 2 500 words. Submissions, though not necessarily qualifying in terms of all the rigorous requirements of a fully fledged scientific contribution, will nonetheless have to be robust and well motivated, and should be of relevance to scientific discourse and humanity.

Yours truly,

James Blignaut  
Editor: SAJEMS

We therefore see this section as an opportunity for senior scholars to provide insight into specific issues or ideas that are unlikely, or not ready, to take the form of a full scientific manuscript. We also see this as an opportunity for students and young scholars to share their research results from a less daunting (and belligerent) platform. Also, as is the case in this issue, we would like to see interesting information and research results, which could spark further discussions, based on a small sample survey.

I would therefore wish to extend an invitation to all our readers to submit shorter, focused, robust and well-articulated views, perspectives, comments, letters or papers to this new section. Submissions to this section will not be externally reviewed. The editorial board will scrutinise submissions for their eligibility.

## FACILITATING THE TRANSITION FROM THE SECOND TO THE FIRST ECONOMY IN SOUTH AFRICA'S RURAL AREAS

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### 1

#### Introduction

Here we describe an economic development programme termed ARISE – an acronym for African Rural Initiatives for Sustainable Environments. The programme has the potential to contribute to the simultaneous achievement of three goals to which South Africa is committed, namely:

- job creation,
- broad-based black economic empowerment, and
- achieving expressed conservation and environmental objectives.

The programme is currently being developed in the form of two ongoing pilot projects that, taken together, employ 576 previously jobless people, have created several small enterprises, and are beneficially affecting thousands of hectares of severely degraded land in South Africa's rural areas (EOI,<sup>2</sup> 2006).

The programme may be categorised in the context of South Africa's economy as either "economic development" through poverty alleviation and in future perhaps part of the Expanded Public Works Programme (EPWP), and clearly has the potential to enable people in South Africa's rural areas to make the transition from the "second" (informal) to the "first" (formal) economy. ARISE therefore offers an ideal opportunity for a large-scale rollout across South and southern Africa.

### 2

#### The concept of ARISE

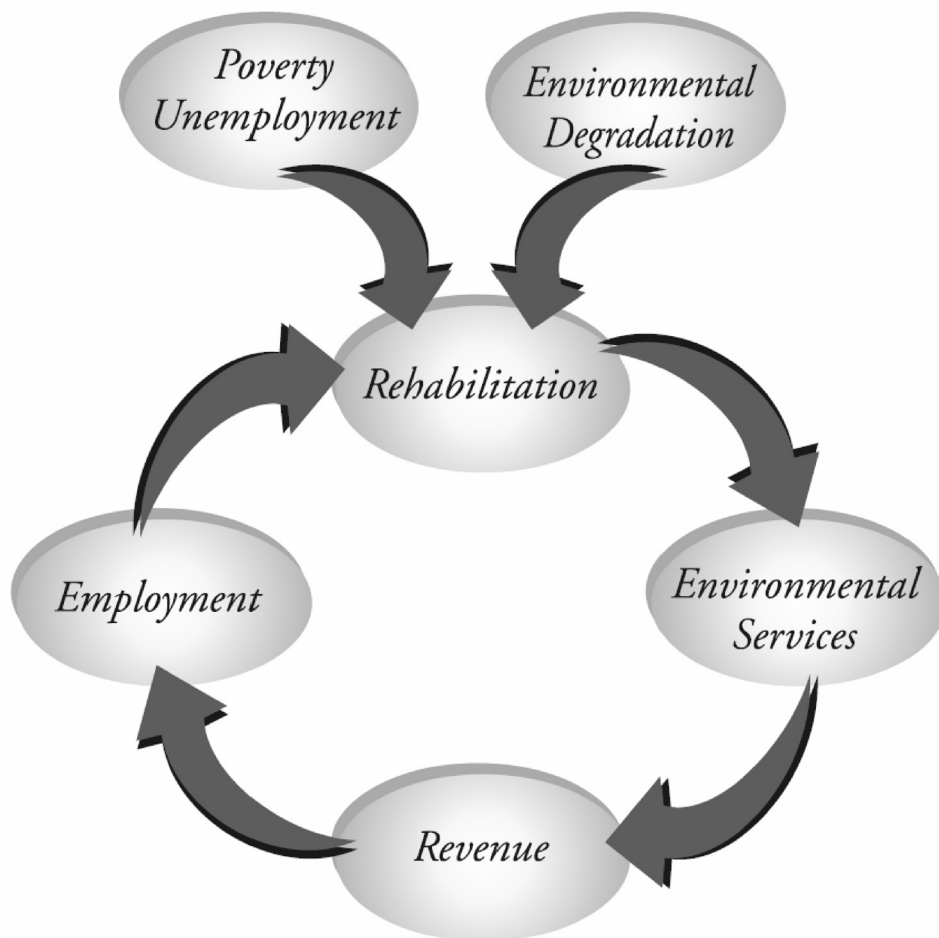
Much of the former homeland areas of South Africa are degraded (DEAT, 1997). In addition to being degraded, the people living there are poor, marginalised, and with little hope of a better tomorrow. Without outside intervention these characteristics combine into a worsening downward spiral that will continue forever. This is the economic and environmental situation that ARISE confronts head on. ARISE is an economic development programme that employs people to undertake natural resource rehabilitation (restore natural capital) in South Africa's rural areas.

ARISE provides the basis for a programme with sustainable and very long-term consequential economic activities, and potentially financially, viable environmental services. These in turn generate revenue to finance employment to undertake the environmental rehabilitation; a virtuous circle, as pictured in Figure 1, thus replaces the downward spiral.

We foresee ARISE to contain the following elements:

- provision of alternative (to indigenous firewood) sources of energy and might include the establishment of woodlots, grid-based electrification, biogas, solar, etc.;
- improved land management, especially livestock management and the management of fire regimes;

**Figure 1**  
ARISE: A conceptual framework



Source: Own analysis.

- environmental rehabilitation, which includes the removal of invasive alien plant species, combating soil erosion, restarting dormant ecological processes, establishing indigenous nurseries, etc.
- maintenance of rehabilitated areas, which include activities such as maintaining firebreaks, land management, community education in conservation, etc.
- labour-based infrastructure provision such as roads and tourist facilities
- development of nature-based tourism, including activities such as hiking, biking, bird watching in scenic areas.

All these activities generate employment or improved livelihood possibilities.

### 3

#### Implementing ARISE

Although the genesis of ARISE can be found in environmental factors, the implementation of ARISE is in actual fact an economic development programme or, more specifically, as a deliberate and targeted intervention in South Africa's so-called "second economy" aimed at drawing people into the 'first economy'.

Three principal reasons why people in rural South Africa are poor are that (1) they have

no product that relatively affluent people want to buy, (2) they have no access to markets frequented by the relatively affluent, and (3) they are un-banked and have no access to credit facilities. ARISE can change all three conditions as (1) the poor acquire products in the form of environmental services that the affluent will buy, (2) market access comes about by definition as the environmental services are purchased *in situ*, and (3) ARISE employees open bank accounts and the very fact of their employment gives then access to credit, albeit limited. A person's transition from rural unemployment to participation in ARISE can therefore potentially be a transition from the second to the first economy. The implementation of ARISE will attempt to maximise the probably unique economic opportunities that this transition opens up. To this end, the elements that make up each ARISE project will have to be analysed in detail. This will entail site-specificity, but as a guide the four components of the "green virtuous circle" shown in Figure 1 and will be discussed briefly below from an economic development perspective.

At the outset, it should be noted that ARISE will attempt to avoid creating employment opportunities that are temporary and unsustainable. These are useful in the short term, but also disruptive over the long term. Instead, ARISE will try to employ people permanently, with training and re-training where needed, possibly for generations. The components of Figure 1 should thus be viewed as operating in parallel over a long time period.

### 3.1 Rehabilitation

Rehabilitation is the first, and essential, step in the ARISE programme. In essence, it will consist predominantly of kick-starting ecological processes that have become dormant, with supplementation of the vegetation that results from this process with "useful" plants grown in local nurseries and then transplanted into the veld. Six sets<sup>3</sup> of economic opportunities are created in this component of ARISE, namely:

- If the natural environment that is rehabilitated is not to become degraded once again, energy sources that provide alternatives to firewood

must be made available. These are currently unaffordable to poor rural households. The revenue stream that ARISE will generate will make it possible to provide alternative energy sources as part of ARISE's remuneration to its labour force.

- The rehabilitation process will be labour-intensive, with direct employment creation. The extent of this will be determined by the availability of funding. It is foreseen that funding will come primarily from the EPWP, not least because the environmental services that ARISE will produce are public goods that will be of benefit mainly to South African taxpayers. Additional sources of finance that deserve further investigation, however, are the social responsibility funds of the corporate sector as well as international donor agencies. Regarding the latter, it should be noted that ARISE projects will satisfy the objectives of three United Nations conventions to which South Africa is a party, namely those on mitigating climate change, combating desertification, and conserving biodiversity.
- Community nurseries will be established to supply "useful" plants. These are plants that provide fuel, food, fodder, and fibre to humans and their livestock, or natural habitats for wild birds and animals. The nurseries will provide employment opportunities.
- The "useful" plants, once established, will provide enhanced livelihood opportunities for rural communities<sup>4</sup>.
- The rehabilitation process will require inputs that generate multiplier effects in the form of further job creation – compost, for example, or wire baskets for gabions.
- Substantial training for skills creation amongst employees will be undertaken as part of the rehabilitation phase of ARISE.

### 3.2 Environmental and economic services

ARISE projects have the potential to generate five kinds of environmental services.

- *Increasing water quantity*

When rain falls, the root systems of plants act as sponges, at first trapping it and

then releasing it slowly into surface and underground water systems. Without the plants, the rainwater flows swiftly to the sea. Vegetation cover thus makes more fresh water available for consumption in upstream catchments, and reduces downstream flooding. Vegetation also reduces soil erosion, thereby decreasing soil runoff and the silting up of dams downstream, so increasing their lifespan. Fresh water is one of South Africa's most limited natural resources.

- *Improving water quality*

Many of South Africa's rivers are polluted, including those in important tourist destinations such as national parks. While their riverine systems remain healthy, they are able to survive this pollution. Siltation caused by upstream soil run off, however, is threatening to harm the riverine systems and impede their ability to cope with pollution loads. This raises the spectre of "dead" rivers in areas that currently attract tourists by their pristine environments.

- *Meeting international commitments*

In 1997, South Africa acceded to three United Nations conventions, thereby making commitments to the international community.

- *Expanding tourism*

It is ironic that some of South Africa's most degraded environmental areas are also intrinsically the most scenic. They have substantial potential for the development of nature-based tourism, but cannot currently be marketed for this purpose because their pervading characteristics of extreme poverty and environmental degradation combine to create an overall aura of squalor. The implementation of ARISE projects in these areas will replace this with a sense of renewal and hope for the future. The projects will incorporate the provision of infrastructure to support nature-based tourism, such as roads, hiking trails and accommodation facilities. These features of ARISE will open up these neglected areas of the country to tourists and in fact,

if viewed in the context of agri-tourism, could even serve as a tourist attraction in their own right.

- *Reducing waste*

South Africa is attempting to reduce the amount of waste entering landfill sites. Technologies exist that allow certain types of waste to be converted into products that could be utilised in ARISE projects. Examples include composted plant growth material that can be created from waste petrochemicals, and construction material that can be made from a plastic and wood chip composite.

Provision of the environmental services discussed above will obviously require revenue. ARISE activities will have to include rehabilitation, building of infrastructure and maintenance of both the rehabilitated veld and tourist facilities. The environmental services listed all have economic value, but none as yet has a market on which it can be sold for financial reward. It is therefore envisaged that ARISE could be funded by the EPWP. However, while some of the environmental services are clearly in the nature of public goods and therefore warrant continued funding from the South African taxpayer through this channel<sup>4</sup>, others can in future be developed in a way that could attract alternative or additional revenue from other sources.

The number of new jobs that can be created by the ARISE programme is a matter of mere speculation. This number is not limited by the need for environmental rehabilitation in South Africa, which is enormous. Instead, it is limited by budgets, which in turn are limited only by ability and willingness to unlock the potential revenue sources discussed above, which also are enormous. In a peculiar way, therefore, ARISE is a programme without a budget constraint: to the extent that it can live up to the promises that have been made above, it can grow in scope beyond boundaries that are currently foreseeable. So: Within the EPWP, how many employment opportunities can ARISE create? The Working for Water programme provides the equivalent of 18 000 full-time jobs nationally. There is no reason to doubt that ARISE could do at least as well!

## 4 Community support

It is obvious that the success or failure of the ARISE programme depends largely on whether or not it will be supported by the rural communities involved. To examine this issue, a community perception survey was conducted in 2005 in the Sekhukhune district of the Limpopo Province. Below is an extract from the report that resulted; we discuss it at length because we believe that it provides substantial support to the conclusion we reach below.

### 4.1 Survey method

We met with officials of the Greater Sekhukhune District Municipality (GSDM) to discuss and evaluate the survey prospects. Participants agreed that the five municipalities that took part should each select ten enumerators from their municipality. Each enumerator had to complete ten questionnaires. We also agreed that the project team would meet with the enumerators and municipal contact persons during a training session before the survey started. The training session took place on 11 April 2005 and all questions were addressed carefully in their mother tongue and the enumerators were asked to select their respondents as randomly

as possible and various examples were provided of how to go about that.

### 4.2 Results: The use of products from the wild

Communities depend heavily on products from the wild, such as firewood, herbs and thatch, to support their livelihoods. The question is, however, to what extent do they utilise these products? The survey results are provided in Table 1. The average monthly use of firewood is approximately 0.5 ton per month per respondent, which, at R250 per 0.5 ton implies an average value of fuel wood used of R40 000 per month for the sample size. Since many of the respondents collect the wood themselves, they indicated that they obtain the wood for free and that the price attached to the product is what it would have cost them if they had to buy it. This value, as with all the other values in the table, is therefore a reflection of the “in kind” value that the natural biomass is rendering to households. The total value is R51 000 per month, or, alternatively, R621 720 per annum. The sample size is too small to extrapolate linearly to the whole GSDM, but given a population of 744 000 in 2001, which translates to approximately 150 000 households, it could realistically be stated that the total in kind value of the use of natural products is substantial.

**Table 1**

The volume and approximate monetary value of some natural products extracted by the respondents living in the GSMD

Municipality	Product	Average volume/month	Price or trade value (R)	Number of respondents (%)	Total value per month (R)
Makhudatha-maga	Fire wood	0.5 ton	R250/ton	51 (52)	6 375
	Thatch	100 bundles	R1/bundle	6 (6)	600
	Herbs	2 kg	R20/kg	14 (14)	560
Tubatsi	Fire wood	0.5 ton	R250/ton	65 (63)	8 125
	Thatch	100 bundles	R1/bundle	8 (8)	800
	Herbs	2 kg	R20/kg	17 (16)	680
	Marula fruit	5 kg	R30/kg	9 (9)	1 350

Fetakgomo	Fire wood	0.5 ton	R250/ton	82 (82)	10 250
	Thatch	100 bundles	R1/bundle	6 (6)	600
	Herbs	2 kg	R20/kg	16 (16)	640
	Marula fruit	5 kg	R30/kg	14 (14)	2 100
Marble Hall	Fire wood	0.5 ton	R250/ton	48 (49)	6 000
	Thatch	100 bundles	R1/bundle	13 (13)	1 300
	Herbs	2 kg	R20/kg	17 (17)	680
	Marula fruit	5 kg	R30/kg	2 (2)	300
Groblersdal	Fire wood	0.5 ton	R250/ton	74 (75)	9 250
	Thatch	100 bundles	R1/bundle	12 (12)	1 200
	Herbs	2 kg	R20/kg	25 (25)	1 000
Total					51 810

Source: Limpopo Government, 2005. *Integrated Reforestation Plan for Sekhukhune District*, Polokwane: Limpopo government.

### 3.3 Results: Perceptions

Another set of questions in the questionnaire was so-called referendum-type questions where respondents were asked to reply either “yes” or “no”. The results of these questions are provided in Table 2. 95 per cent of the respondents think the government should rehabilitate the land and are prepared to participate in a rehabilitation

project if given the opportunity. Most (97 per cent) of the respondents are willing to take care of the land once it has been rehabilitated and 93 per cent believe that land rehabilitation would improve their living conditions. Currently 82 per cent of the respondents are utilising products from the wild such as firewood and medicinal herbs. These values do not differ much among the respective municipalities.

**Table 2**  
Outcomes of the referendum-type questions to access perceptions

	Question 1*		Question 2*		Question 3*		Question 4*		Question 5*	
	yes	no	yes	no	yes	no	yes	no	yes	no
Makhudutha-maga	91	6	89	8	95	2	71	26	92	5
% in municipality	94%	6%	92%	8%	98%	2%	73%	27%	95%	5%
Tubatse	99	5	103	1	104		79	25	101	3
% in municipality	95%	5%	99%	1%	100%	0%	76%	24%	97%	3%
Fetakgomo	98	2	98	2	100	0	93	7	83	17
% in municipality	98%	2%	98%	2%	100%	0%	93%	7%	83%	17%
Marble Hall	87	11	88	10	88	10	76	22	90	8



	Question 1*		Question 2*		Question 3*		Question 4*		Question 5*	
	yes	no	yes	no	yes	no	yes	no	yes	no
% in municipality	89%	11%	90%	10%	90%	10%	78%	22%	92%	8%
Groblersdal	99	0	97	2	98	1	91	8	98	1
% in municipality	100%	0%	98%	2%	99%	1%	92%	8%	99%	1%
Total	474	24	475	23	485	13	410	88	464	34
% in total	95%	5%	95%	5%	97%	3%	82%	18%	93%	7%

Source: Limpopo Government, 2005. *Integrated Reforestation Plan for Sekhukhune District*.  
Polokwane: Limpopo government.

\*The questions were:

Question 1: Do you think that government should rehabilitate degraded land?

Question 2: If you were given the opportunity to participate in a land rehabilitation project, would you do so?

Question 3: If the land was rehabilitated, would you be prepared to take care of the land to make sure that it does not degrade again?

Question 4: Do you currently use products from the wild for own consumption, such as firewood, medicinal herbs, and others?

Question 5: Would restoration of the land improve your living conditions?

Due to the small sample size one cannot assume that the 498 respondents to the questionnaire represent all of the people living in the District, but it does clearly indicate a strong support for rehabilitation. This support for rehabilitation reflects the importance of natural resources for the people of the District. They witness the base of their livelihoods being eroded and they call for action. In some isolated cases people have started to take action themselves and in other cases they provide meaningful insight as to how and why restoration should be considered an issue of priority.

Apart from the survey results describe above, it has been hugely insightful for us to observe the way in which communities have taken ownership of the ARISE pilot projects when afforded the opportunity to do so. Much has been written

about the need for development projects to be “bottom up”; they seldom are. We are happy to mention that ARISE indeed is “bottom up”!

## 5

### Conclusion: Rolling out ARISE

Background work on ARISE started in 1999 and was conducted by an interestingly-diverse group of scientists that included economists and ecologists. The questions they asked were:

- Is ARISE economically viable?
- Is ARISE ecologically possible?

In both cases the results and evidence to date (two pilot studies and the research conducted in Sekhukhune) indicate a firm, and in some cases a resounding, “Yes!” It seems rather obvious to us that given the need for employment in South Africa and the ability of ARISE to create jobs, that ARISE should be expanded considerably.

### Endnotes

- 1 Thank you to all the people who have made ARISE happen. Special thanks to those associated with the Conservation Ecology Research Unit, Department of Zoology & Entomology, University of Pretoria, Pretoria 0002, South Africa, GreenGrowth Strategies cc and Environment Offset Investments (Pty) Ltd – without their tenacious passion, patience and persistence, ARISE would never have arisen.
- 2 These can be complemented by additional activities such as food or woodlot cultivation, but



these are not directly the concern of ARISE and will not be discussed further here.

- 3 Village elders speak of how they could look after their fathers' cattle for a whole day in the veld without becoming hungry because they could eat the naturally-occurring produce. They comment that this is no longer possible.
- 4 It is interesting to note that an average social welfare grant costs the taxpayer around R850 per month. The taxpayer receives nothing in return. By comparison, a labourer in the ARISE programme, in terms of rules laid down by parliament, is paid approximately the same amount per month in

return for delivering all the environmental services listed above.

## References

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- 1 DEAT (1997) *Environmental Potential Atlas*, Pretoria: DEAT.
- 2 ENVIRONMENTAL OFFSET INVESTMENTS (EOI) (Pty)Ltd. (2006) *African Rural Initiatives for Sustainable Environments*, Unpublished.
- 3 LIMPOPO GOVERNMENT (2005) *Integrated Reforestation Plan for Sekhukhune District*, Limpopo government: Polokwane.