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Emerging Policy, Plans and Programs Towards a Green Economy and Social Development in Limpopo, South Africa

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Abstract

Limpopo is the most northerly province in South Africa and is significantly rural in character. It is developing policies and programs aimed at increasing employment, growth and development. The social and equity components are key features of these plans. The province too is committed to champion sustainable development through amongst other ways the promotion of a green economy and creation of green jobs. The objective of this paper is to examine extent to which government plans for growth and development are promoting the green economy and sustainable development. The paper highlights the likely impacts of these efforts on society and how rural communities are responding to green economy initiatives. This is illustrated using three projects in Limpopo. The paper argues that the green economy is likely to further alienate women and other poor communities unless social development issues are taken into consideration in the implementation of green projects. Limpopo is a rural district and hence any development of the green economy must take into consideration the limitations and opportunities this might have on rural poor communities and women.

Introduction

Climate change and the need to respond and cope with associated negative impacts are now recognised as priority in the entire global economy. One of the key responses is what is now referred to as the ‘green economy’ which involves “changes in the patterns of investments, technology, production and consumption taking into consideration sustainable development imperatives” (UNRISD 2011: 1). At the centre of this new economic approach is the necessity to shift from high to low carbon footprints. There are many interpretations of how this is to be achieved and various countries and regions are in the process of developing policy with several projects already at the feasibility stage. Using the case of the Limpopo, a province in South Africa this paper reviews the emerging green economy policy and programs to establish the extent to which social dimensions and impacts on women and poor rural communities are receiving attention. The research for this paper included a review of official plans, programs, feasibility studies, and environmental and social impact studies of projects, complemented by project field visits and interviews with relevant people and authorities. To illustrate the extent to which social development are in fact considered three projects are discussed; first, Mapfura-Makhura Incubator - bio-fuel project; second, The Solar Vision Limpopo and third, The Medupi-power station coal liquefaction project in Lephalale.

The green economy: A global view

Green economy refers to the holistic view that a new global economy is required in order to counteract the negative impacts of over-exploitation of natural resources, poverty and inequality, the financial crisis, climate change and other global changes that are threatening human existence on planet earth (UNEP 2011b). It stresses environmental sustainability and social justice and is locally based. In response the United Nations has called for the need to reconceptualise economic recovery through a Global Green New Deal (UNEP 2009a).

The G20 countries (including South Africa) which contribute most to greenhouse gases through their production and consumption patterns have committed themselves to green stimulus packages. Key areas of investment include green buildings that are energy efficient, new renewable technologies such as solar, wind, geothermal and sustainable transport, use of bus and rail transit systems, ecological and agricultural sustainability (UNEP 2009a:1)

A transition to a green economy is underway in Rio+20 and beyond. It is envisaged that efficient management of natural resources and human capital would shape wealth creation and direction of the world. UN millennium development goals and the Rio+20 process addresses poverty and delivering of a sustainable 21st century whose economy is based on low carbon pathways which catalyse economic activity (UNGA:216.) The ultimate goal of economic activity is “to meet the basic needs and to contribute to a better quality of life for all, now and in the future. Accordingly a green economy places “social and environmental justice and equity within nations and between nations at the centre ... and includes a just use of the earth resources and reversing the trend of the widening gap between the poor and the rich” (EU 2010; LPG 2010a:5). At the centre of the green economy debate is the need to develop policies globally, regionally and nationally. In South Africa and in Africa as a whole the green economy policy development and implementation must be guided by the imperatives for growth in the

face of increasing inequalities and marginalisation of whole communities. A South Africa green economy pathway is therefore concerned about how to balance natural resource use with economic development needs (Fitzgerald, McLennan and Munslow 1999; Le Maitre, O'Farrell and Reyers 2007:367) which should also include equity issues, the persistent problem of poverty, gender inequalities, and rural development.

South Africa's pathway to a green economy

South Africa is an emerging market and a middle income country which depends on mineral resources and has a well-developed modern infrastructure. The government has followed conservative fiscal policies since achieving democracy in 1994 (South Africa 2007a), which allowed the economy to grow and was spared the worst of the global financial crisis.

Inequalities however persist among various population groups in the country, with women in rural areas constituting the most marginalized. There is pressure on government to deliver basic services to low income rural and urban areas and to address the land question, unemployment, poverty, crime and educational opportunities. The government is committed to promoting the green economy as a means of lowering carbon emissions and providing new employment opportunities South Africa in its various policies and plans has set aside funds to support this emerging new economy. The country is also working closely with international organisations and is a signatory to several treaties aimed at changing to a low carbon economy which supports environmental sustainability and social development (Winkler 2007; Mdluli and Vogel 2010; Zuma 2010, DEA 2011).

South Africa launched a stimulus package which covers a period of two years, from 2009-2011 amounting to the value of US\$7.5 billion. The country has also developed a climate change response policy which aims to reduce the emission growth in the country which is very high considering that South Africa is still a developing country. These targets include energy efficient buildings, water and waste management practices, sustainable production and consumption, and also by generating 15 per cent of the country's electricity from renewable sources by the year 2020 (DEA 2010). The country's renewable targets will be enhanced as an enabling environment for renewable energy (DEA 2010, DEA 2011). The policy also puts emphasis on the need to effectively adapt to and manage unavoidable and potential damaging climate change impacts, through interventions that build and sustain South Africa's social, economic and environmental resilience. It is based on the principle of common but differentiated responsibility, precautionary principle, and polluter pays principle, people centred approach, informed participation and inter-generational rights. South Africa is also working closely with international organisations to support its transition to a green economy (DEA 2011: 12).

The role of the Industrial Development Corporation (IDC) is key in the transformation to a green economy and has committed about US\$3 billion (ZAR25 billion) to green economy investments over the next 5 years (2010-2015) (Financial Mail, May 2011). The Department of Economic Development in conjunction with IDC is already undertaking green initiatives as they have installed about 25,000 units of solar water geysers in low cost houses both in urban and rural areas. The IDC focuses on green industry projects that struggle to get funding from traditional sources. This will be done through the establishment of the Strategic Business Unit (SBU) which will target US\$3

billion from 2010 to 2015. The green industry SBU will focus on different components of the green economy such as companies that offer projects that enhance the environment, reduce carbon emissions, renewable energy projects, emission and pollution management, development of the fuel based green energy and bio-fuels, creation of jobs and uplifting of communities (Financial Mail, May 2011)

The government sponsored invasive species management and water supply improvement program referred to as the working for water program (WfW) was launched in 1995. WfW employs members of local communities. The majority of whom are rural women to clear alien trees and plant species, which results in increased water supplies. This initiative is in partnership with local authorities, government, conservation, environmental organizations and NGOs (Binns, Illgner and Nel 2001; WRI 2011). So far the programme has provided jobs and training to approximately 20,000 people from the most remote rural areas per annum, of which 52 per cent are women. This initiative deliberately targets the most vulnerable groups in the society, with the target of 60 per cent women, 20 per cent youth and 5 per cent disabled. This also leads to creation of secondary jobs in rural areas such as furniture manufacturing (Limpopo Provincial Government, LPG 2011b:30).

Emerging policy and plans in South Africa therefore show a clear inclination towards ceasing the opportunity provided by the green economy to potentially contribute significantly to economic development, promote sustainability of the environment while creating new jobs and improving livelihoods of whole communities both in urban and rural areas. The key problem is how to bridge the gap between these desirable plans and policies and bring about actual changes in behaviour and responses of all people from the national, provincial, municipal down to community and individual levels. Limpopo has outlined how it intends to implement the transition to a green economy, which includes empowerment of communities and eradication of poverty through the green economy in conjunction with other plans and programs for growth and development.

Growth and development plan of Limpopo

Limpopo's leading economic sectors are mining, tourism and agriculture all of which are dependent on the rural resources. Mining experienced most growth in the period between 1995 and 2002. In terms of social development the province has recorded increased numbers of school going youth but the pass rate for the province for the National Senior Certificate examinations has remained below 60 per cent. The province aims at providing services to all, but the actual performance has not met expectations in many rural areas where many dwellings have no access to water within their houses. Despite the high standard of the quality of water in the country, some municipalities do not meet the rigorous standards. There exists a gap in terms of affordability of electricity with many rural dwellers accessing limited electricity through government subsidies. There are improvements in health delivery but many challenges remain including HIV, TB, child and maternal mortality, governance and accountability in public health (LPG 2010a).

The most pressing problem in Limpopo and many other predominantly rural provinces is the absence of sustained growth and the creation of jobs that are expected to reduce poverty and improve livelihoods. Many strides have been made towards creating a stable multi-racial society but the distribution of resources remains critically imbalanced, while the emerging middle class is in most cases far removed from the

realities of poverty and unsustainable livelihoods of rural areas. Many poor women only source of income are meagre government grants which they share with their extended families. Others find jobs in commercial farms where they work for long hours and their rights are often abused. The government tries to monitor and take action on any reported cases but many would not like to risk losing their only means of livelihoods.

A review of various Limpopo province plans, programs and initiatives therefore clearly show commitment to addressing the problem of poverty through economic growth, equitable access to resources and provision of social services of a high quality to all. Many authors have indicated that South Africa has some of the most advanced policies but the major problem is the gap between policy and implementation. This is due to inherited inequalities which have continued between races, gender, urban and rural areas, and lack of capital and skills. Governance issues have also been blamed for the lack of progress in implementation. The green economy is therefore seen as an opportunity to address these persistent problems. The opening statement of the Limpopo Green Economy Plan is optimistic and notes that “It is an exciting time in the history of the province—there is an opportunity for all members of society to participate in credible economic activities” (LPG 2011b: 1).

The green economy and creation of green jobs in Limpopo

Limpopo is in the process of developing policies and initiating programs and projects aimed at increasing employment, growing the economy and the creation of green jobs. As illustrated above social and equity issues feature markedly in the emerging policy. The province aims to champion sustainable development through amongst others, the green economy and creation of green jobs program (LPG 2011b). It envisages a green economy in agriculture, construction, manufacturing, Installation, Science and technology, and in the service sector. As indicated in the plan “This includes activities that help to protect and restore ecosystems and biodiversity; reduce energy, materials, and water consumption through high-efficiency and avoidance strategies; de-carbonize the economy; and minimize or altogether avoid degeneration of all forms of waste and pollution”(LPG 2010a:69). Figure 1 below therefore represents Limpopo province pathway to a green economy.

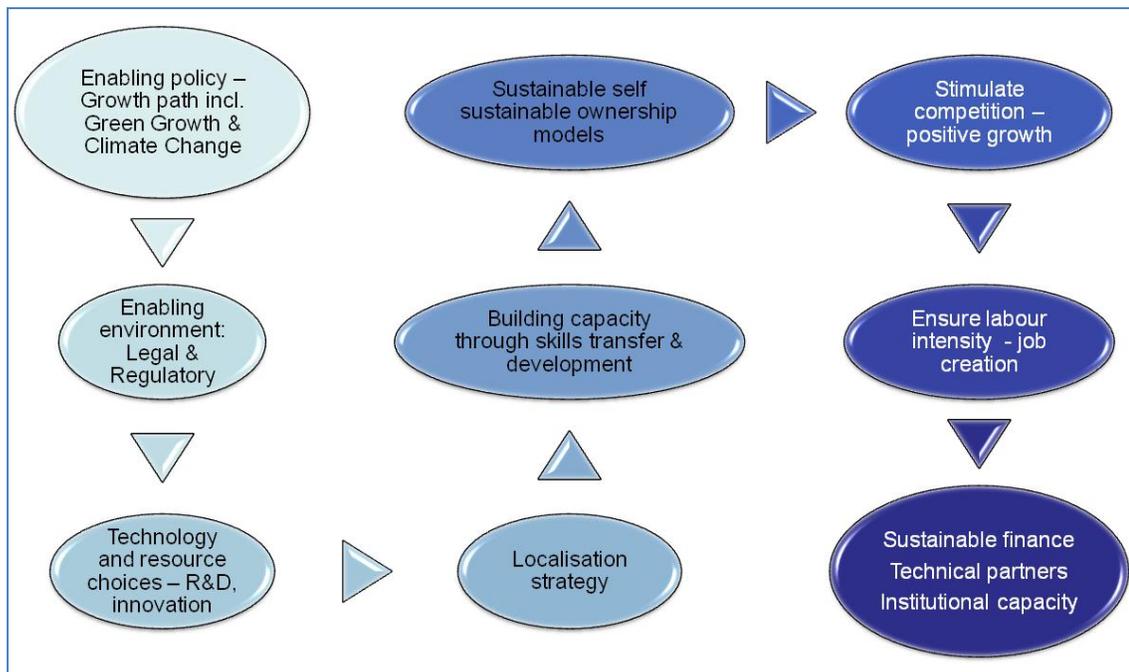


Figure 1: Limpopo pathway to a green economy

Source: Limpopo Provincial Government Green Economy Plan (LGEP) (Draft plan), 2011: 4.

The pathway starts with enabling policy formulation within the context of national priorities for growth and development which sees green growth as a necessary response to climate change. Policy formulation is currently taking place in the province with the green policy discussion document having been circulated to various stakeholders. The green economy implementation must however be guided by relevant regulatory measures and legislation. The province then makes the necessary technology choices accompanied by relevant research to come up with innovations that would drive the process. These choices will be determined by local conditions to ensure relevance. Of great importance is the need to develop capacity through training and retraining of manpower to drive the green economy. This would be followed by getting the buy in to own these various sustainable models which would bring about competition and positive growth of the economy. The pathway envisages the creation of labour intensive activities which would promote growth and ensure job creation. Finally the green economy in Limpopo can only be achieved if at the initial stage there is adequate capital injection from government and other sources through collaboration and partnerships. At every stage however gender and poverty issues must be given priority from the policy formulation level all the way to implementation. We are currently at the conceptualization stage of a research project whose aim is to develop models and scenarios for mainstreaming gender issues and poverty into the green economy in Limpopo.

At the centre of development efforts of the Limpopo province and its emerging green economy is the need to provide for its largely rural and marginalized communities. Two sectors (agriculture and energy) discussed here are expected to contribute to job creation, poverty alleviation, service provision to communities and promote rural development.

Green economy and agriculture

Agriculture is envisaged to play an increasingly important role in creating jobs, ensuring food sufficiency in the province and for export, while improving the livelihoods of rural communities the majority of whom are women. The province because of its tropical location relative to the rest of the country is a major producer of tropical fruits and vegetables. Most of the production however takes place in commercial farms where many black people work earning negligible salaries as farm labourers with precarious rights despite new legislation (DEAT 2007:95). Former black homeland areas contribute only marginally to the agricultural production in the province. The province has experienced out migration to other provinces and hopes to stem this trend through the new green economy. The green economy is expected to bring about growth in these lagging areas. Agriculture, food production and forestry are focus areas of Limpopo's green plan. Despite the potential that exists in the province for agriculture, fishing and forestry the sector only contributed 3.7 per cent to GDP-R. It is however an important contributor to the overall household food security and for export at the National level (LPG 2010a, 2011b).

Agriculture and forest subsector is a major exploiter of land resources leading to land degradation especial in the former homelands due to land use levels which are higher than productive capacities (DEAT 2007:97). The environmental footprint is high from this sector, hence the need to move to more sustainable agriculture. Furthermore invasive alien plants are destroying whole ecosystems requiring urgent interventions. Food security is a key consideration in the plan.

Key challenges in agriculture include: extension services not keeping up to date with latest innovations, inadequate infrastructure, sustainability of rural resources, Climate change, failure of land reform projects, lack of relevant policies and legislation, slow pace in processing land claims and lack of access to markets. Initiatives to overcome these challenges emphasize seizing the opportunity to target four categories of farmers for support and development (LPG 2011b: 43). These include: households that are food insecure, subsistence and emerging farmers and both small scale and large scale farmers. Five strategies identified in Table 1 below illustrate the potential impacts, challenges and opportunities for rural poor women and youth.

Research is underway on innovative sustainable agriculture including organic farming and agro-ecology. The University of Venda for example is initiating the training of 800 extension officers in agro-ecology who would in turn introduce sustainable agricultural innovations in the various villages in Limpopo province.

The question of access to land for the majority of the residents is crucial since most of the province is made up of former homeland areas where the land productive capacities are limited. Land reform has generally been unsuccessful with many of land claims still outstanding (Hall 2007). If the green economy is to bring in new participants in agriculture especially for the poor and marginalized women access to land rights need to be addressed urgently. The following is an example of how small scale farmers in rural Limpopo are transitioning into the green economy through growing of sunflower and soya for production of bio-diesel and impacts on the poor and women.

Table 1: Selected strategies for agriculture and green economy

| Initiative | Potential impact on women | Potential impact on youth | Challenges | Opportunities |
|---------------------------------------|--|--|--|---|
| Organic and local production projects | Jobs, income, financial independence self-actualization, household food security | Income and financial stability, being a productive member of society, acceptability, self esteem | Access to land, markets, inputs | Government support, local development, |
| Water efficiency | Acquire water management skills | Training opportunities in water management | Access to water climate change, Lack of skills | Irrigation, rain water harvesting, Government support |
| Appropriate crops | Better nutrition at the household level | Healthy youth | Changing food preferences | Indigenous knowledge systems |
| Feed lots regulation | Environmental education, conservation skills, rangeland management skills | Environmental education and conservation skills | Degraded communal lands | Extension services, government support, new proposed land reform |
| Production of bio-fuel resources | Jobs, income, group participation and business skills | Jobs, income, skills development | Access to land, capital, markets | Government support, public private sector collaboration, research |

Source: Adapted from LPG: 2011b

Case studies

Mapfura Makhura Incubator (MMI) - small scale farmers transition to bio-diesel producers

Mapfura Makhura Incubator (MMI) was established in 2006 and operates as a section 21 company (a non-profit organization). MMI is situated 35 km outside of Marble Hall inside the grounds of Tompi Seleka Agricultural Training Centre. MMI targets small scale black farmers within Limpopo province in order to train them to become commercial farmers (Maluleke 2008). The farmers grow soya and sunflower which is processed for production of bio-diesel. Debates on bio-diesel initiatives focus on the role of this industry in food security (FAO 2008; Maltitz et al. 2009; Edje 2010). The government has banned the growing of maize for the purpose of producing bio-diesel, even though commercial farmers disagree with this move, arguing that it is possible to divert some of the maize grown without jeopardizing food security in the country.

MMI came into being as a result of collaborations among different organizations and institutions from public and non-governmental organizations (NGOs) coming together and forming part of the organization. These founding members include SEDA Technology Programme (STP); Council for Scientific and Industrial Research (CSIR); Agricultural Research Council (ARC); University of Limpopo (UNIL); National African Farmers Union (NAFU); University of Venda (UNIVEN); Trade and Investment Limpopo (TIL) and Limpopo Department of Agriculture (LDA) (Banda 2009; Lerner et al. 2010).

MMI was expected to create more than 2,000 jobs in the first two years (2006-2007) of its existence through its incubator programme. The organisation, trained its first group of 32 small-scale farmers in 2008 to enter the bio-fuels market. The incubation program aims to empower small-scale farmers to create SMME's that would exploit the bio-diesel value chain. The small scale farmers are provided with technical and management skills in farming soya beans and sunflowers. The program started with 32 farmers planting on 1 886 ha of land. It was anticipated that by 2010, some 2100 jobs would be created on 10 000 ha of land (Moodley 2008). Further interviews to date indicate that about 150 farmers have graduated from the organization (Seoka 2011). Sunflower seeds are a very popular crop but the company wants to see development down the value chain to encompass activities such as fertilizer, seed production and feed manufacture (Moodley 2008).

MMI registered 47 female farmers as its incubatees from Sekhukhune rural district municipalities. The project aims at addressing gender balance and participation but only 30 per cent of the participants were involved in the pilot phase. This is associated with poor information flows, and limitations in the number of women who own land, as this is one of the criteria for selection (Banda 2009). The incubatees have been trained on business management, financial management and record keeping. Bio-fuel production has empowered them economically, since most of them are key breadwinners in their families. Some have also reported changes in their social relations at the household level since engaging in the project (Limpopo Business Guide 2007).

Challenges faced by male farmers are operational in nature. There are concerns about the cost of electricity, machines break and the costs for repairing these machines are high (African Centre for Biosafety 2008; Maluleke 2010). An interview with a key informant has revealed that major challenges experienced by the organization include lack of mechanization, lack of finances and access to the mainstream market.

Another key concern in South Africa is the lack of effective engagement with rural young people especially rural young women. MMI therefore set this as one of their goals, to promote women and youth empowerment (Maluleke 2010). Some identified causes for this lack of rural representation is due to lack of job opportunities in the formal sector, lack of specific events and outreach programs into rural communities, cultural and traditional barriers, and the absence of recognition by decision-makers of youth potential as agents of positive social change. MMI is trying to break these barriers (Banda 2009).

This case represents a good model for transitioning to a green economy particularly the potential to bring poor women, youth and men into productive work.

Green economy and energy sector

The energy sector in conjunction with the science and technology, NGOs and other sectors are currently engaged into research in gases such as bio-ethanol, bio-diesel and methane gas from waste and renewable resources. New sets of national guidelines have shifted the emphasis towards finding fuel from crops that are less likely to affect food security, like sugar cane, sugar beet, canola and sunflower seeds (Lerner et al. 2010). Limpopo is well placed to exploit these crops as this province largely depends on the primary activities. The province has comparative advantages including: thousands of hectares of open space that could be used in the low carbon market; high solar intensity which can be used in solar energy generation; relevant mineral deposits, such as silica, which can be used to make products needed in the solar-energy sector; and a well-established and equipped agricultural sector, capable of producing crops for use as bio-fuel an existing example is the MMI company which is an exciting initiatives in Limpopo (LPG 2011b).

The plans and programs show the great potential that exists in the province for development of a green economy. The challenge of ensuring that these projects do not further disadvantage vulnerable groups requires further consideration especially in the implementation stage. Solar vision is one such project that illustrates how gender and poverty may be incorporated in implementing low carbon strategies.

Solar Vision

Solar Vision was established in 2000, and is one of four concessionaires that provide non grid electricity to rural areas around South Africa. Three other concessionaires that provide solar include RAPS (Rural Area Power Solutions) in Northern Kwazulu Natal (Kwazulu Energy Services and NuRa) in Southern KZN and KFW (Kreditanstalt Fu Wiederaufbau) in the Eastern Cape.

The company's business is to primarily provide Solar Home Systems (SHS) as a Non-Grid Energy Service. The delivery of this service involves the installation of SHS on a capital subsidy basis. In addition Solar Vision will provide ongoing maintenance for a twenty year period on a Fee for Service basis. The main aim of the company is to provide basic electricity to mainly poor people living in the remote and rural areas (Prasad 2007; Jacobs 2004 & 2011). The company came about as a result of a government tender, to supply non grid energy to off-grid areas where Eskom is not going to supply energy in the next 3-5 years. They are monitored by the department of Minerals and Energy (DME) and also work with Eskom, local municipalities and also with traditional leaders.

Solar Vision provides environmentally friendly solar energy with products that are reliable and affordable throughout the Limpopo province and surrounding areas. Currently the company is operating in two municipalities which are Vhembe and Capricorn municipalities. It was established with the vision of accommodating needs of solar electricity products to home owners, hotels and companies.

The company provides products and services such as Solar Water Systems (heating your water with the free energy from the sun), SHS (providing electricity to disadvantaged people in off-grid areas) and also sells gas. Initially they started by supplying a 50 watts solar panel and they are now providing a 75 watts solar system. The solar panel is a 4

light system, which can also play portable radio, charge cell phones and black and white televisions.

The provision of solar energy is carried out through municipalities who identify villages without electricity. They work in collaboration with ward councillors and chiefs and local representatives (SANCO). Solar vision holds meetings with community members before installations to explain the use of solar energy and its role in promoting sustainable development (Clark 2005). The connection fee for this service is ZAR110 and ZAR68 maintenance fee per month for the solar panel which the municipality pays ZAR40 on behalf of the customer while the customer pays only ZAR28 (Jacobs 2011).

Gender issues were taken into consideration during the initial stage of this project. This was done by also employing women and training them to be installers for the solar panels, but the company experienced problems as the women quit because the operating system was too heavy for them to lift. Local men are therefore employed and trained as installers of the panels and also for maintenance.

Local communities are responding positively to this initiative. To quote Mrs Sambo:

...since using the solar, I no longer have to buy candles and paraffin and I can also move around in the night because the outside light is bright. It feels good to be able to have lights.

Another woman informant, Mikateko said:

I feel happy because with the job that I have as a representative of Solar Vision in the community, I will use this job as a stepping stone, because I want to further my studies.

Bongani said:

I am now able to read in the night without worrying that the lights might go off and also these lights are bright as compared to the paraffin lamp which I used previously, and I am not even worried of finishing the paraffin as the lights can be on for the whole night.

The demand for solar energy is expected to continue despite expansion by ESKOM because of the growth of rural communities. The main challenge experienced includes keeping the project as a viable business, since previous partners dropped out when they realised not much money would be made. The government and local municipalities are however subsidizing the community members most of whom are rural poor women. Other initiatives in the traditional energy sector are also contributing to the transition by ensuring changes in technology while at the same time taking into consideration social development issues (Winkler 2007). A good example is the MEDUPI power station in Lephhalale.

Medupi power station: contradictions and opportunities

South Africa is faced with the challenge of inadequate energy supplies to drive economic development. The Energy policy is therefore to move towards new technologies in exploiting coal which is a source of cheap energy in the short term and increasingly move towards renewable energy in the long term (Winkler 2007; African Development Bank 2009).

Medupi power station is a coal fired base load power plant in Lephalale in Limpopo. The station comprises six units with an installed capacity of 4,764 MW. Construction on the plant started on May 2008 and envisaged to be completed on the year 2015. Coal stations around the world are very high polluters of the environment, however Medupi plans to employ super critical boiler technology which increases plant efficiency, reduces coal consumption and also reduce CO₂ emissions to the environment (African Development Bank 2009).

An estimated ZAR3.6 billion has been set aside to contribute to black women's organisations in order to address the gender disparities that exist in the community (African development Bank 2009). This is a good initiative on the part of Eskom. The social impacts of the project include capacity generation, impacts on the GDP, new industries, employment generation and reduction of poverty, helping South Africa to move towards one of the MDGs, where the gap between the poor and the rich is very high. This project is expected to produce 9,000 permanent jobs and is envisaged to support the long term growth and development plan of the country. The number of temporary and permanent jobs created will vary with the construction phase creating about 1,000 jobs, and 8,000 jobs during the peak construction phase.

The project will also create opportunities to local businesses through growth of the downstream industries in support of the key sectors in the project. It has been estimated that about 2,000 jobs will be created as result of the demand of coal supplies from the mines to support the project. Local businesses which provide food, laundry, maintenance, transport, hotels and security will stand to benefit as the workforce will need these services. The project will boost the social development of the area with improvement in local infrastructure, which is estimated to be about ZAR2 billion including houses, upgrading of local sewerage plant, building of 2 schools, recruitment centre, fire station, and an ICT centre (African Development Bank 2009). The Medupi project is not only envisaged to benefit the Limpopo province but also the country in terms of infrastructure development, there is going to be construction of a road from Richards Bay to Lephalale, to enable transportation of plant components to the site.

Eskom has also set up a development foundation with a mandate to deliver on its corporate social investment objectives, to enhance the quality of life in targeted communities whilst maximizing the strategic impact of Eskom. The Development Foundation provides grants for economic development as well as donations for social programs and has developed support programs, these programs are depicted in Table 2, for the Lephalale community.

Table 2: Lephallale Eskom Social Responsible Program

| Project | Description | Scope of Eskom intervention | No. of benefactors |
|--------------------------------------|---|---|---------------------------|
| Intel/foundation classroom computers | Partnership with Intel to install Classmate computers in primary schools around Lephallale | The foundation covers the cost for the servers, teacher laptops, printers, wireless access points, hubs, cabling, classmate laptop charging trolleys, software licences for 5 years, education content training | 1714 |
| Primary schools program (numeracy) | Numeracy and mathematics enhancement program for primary schools | Numeracy and mathematics enhancement program for primary schools | 8000 |
| Primary schools program (literacy) | Primary school language, literacy communication primary school language, literacy and communication | Primary school language, literacy and communication program in 27 primary schools-3 years | 8000 |
| School Governance & leadership | School governance & leadership program | School governance and leadership program | 307 |
| Lephallale | Contractor academy | Contractor training for 28 Medupi emerging contractors | 28 |
| Total | | | 18049 |

Source: Adopted from African Development Bank (2009)

Through these programs Eskom hopes to contribute to the development of Lephallale and surrounding rural areas by delivering new infrastructure and electrifying where possible, as well as food security and adequate institutional arrangements for schools. The ecological footprint of coal mining is very high and hence new technologies for exploiting this resource sustainably must be employed.

The three case studies discussed above all illustrate efforts towards incorporate gender and poverty issues in the planning and implementation of projects. These efforts though commendable are rather limited in scope and there is a need to come up with a proper tool for mainstreaming gender into the green economy. Key issues that must be incorporated in plans as the green economy emerges in Limpopo include:

- Collection of gender disaggregated data
- Access to and ownership of land by both men and women
- Availability of technology for both men and women
- Equality in accessing information and extension services
- Benefits accruing to both men and women from processing and sell of products
- Control over resources
- Degree of income generating opportunities for both men and women
- Access to markets for green economy products.
- Access to health facilities
- Skills development

Conclusion

This paper has shown that in response to climate change, and the imperative for sustainable and social development, South Africa and the Limpopo province are developing various policies, plans and programs. These activities are envisaged to result in creation of green jobs which will grow directly and indirectly in sectors such as transport, energy, building, manufacturing, and agriculture and forestry industry.

Limpopo Province already has a number of innovative projects. Projects discussed in this paper provide alternative energy and use technology to reduce emissions. Community members view these projects as important due to their ability to create employment in an area where jobs are scarce. The general opinions in the province are positive with regard to green economy initiatives that the province is undertaking. However, sentiments from those involved in green projects are that more can still be done to alleviate poverty and promote women's rural livelihoods and gender equity. The question of access to land by community members especially women is a key concern. Initial plans while clearly articulating a close relationship between green economies and sustainable development are generally weak on how social development objectives will be achieved. Implementation challenges remain and must be addressed. The coordination between various stakeholders is essential and new research must address the question of how to mainstream gender and poverty into the green economy.

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