



seed

transforming learning through permaculture



Schools Scrapbook 2007

A report on Year 2 of the Sustainable
Schools Program
July 2006-June 2007

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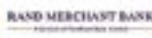
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Talfryn, Leigh & Georgina
at E Stephens.



Thatu - Rocklands Herb Labyrinth



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Talfryn & Mzu transporting rain tank





Seedlings with the compost system

Who are seed?

School's Environmental Education and Development (SEED), is a registered non-profit organization (052-326-NPO). SEED, an organization of educational professionals was founded in July 1998 as a joint partnership between Abalimi Bezekhaya, the Novalis Institute and Earthcare Education Aotearoa (New Zealand). Based in Cape Town, SEED's work has historically been focused on working with primary schools on the Cape Flats; however, funding has recently been received to roll out a pilot of this program on a national level.

The people who make it happen

Leigh Brown

SEED Coordinator

Leigh has a degree in Journalism from Rhodes University and worked in the world of publishing for four years before heading over to Australia to study Permaculture at the Permaculture Research Institute. Leigh is currently working towards her Permaculture Diploma and has a wealth of knowledge in sustainable systems. Leigh came back to South Africa in 2000 to restart SEED; she is now focussing on getting SEED accredited, rolling out the national program and developing the Permaculture Educators (Perm Ed) Training.



Talfryn Harris

Operations Manager

Talfryn was first exposed to Permaculture in 1990. He has a degree in Environmental Sciences at the University of Witwatersrand. After a stint as a science teacher at a high school he worked on essential oil production. Before joining SEED as Operations Manager he spent 3 years with the Medicinal and Edible Gardens Association. Talfryn has been tasked with keeping the Cape Town-based Sustainable Schools Program firing on all cylinders.



Mzukisi Zele

Permaculture Facilitator

Mzu started working with SEED in a voluntary capacity in February 2006 and has worked on the Bauwagen project. Be-



ing the father of Sipho and Apelele helps Mzu to understand child behaviour and to work with Learners. Mzu has worked with three schools in the Advanced Phase and feels that he has learned a lot and finds the work rewarding and challenging. He feels like he has found his calling in Permaculture and looks forward to another year of facilitation .



Ramon Adams

Permaculture Facilitator

Ramon is currently completing his Community Development Practitioner Certificate. The development of our youth's sense of self respect has become his passion and driving force. He believes that nature has the transformative ability in bringing the much needed unity and patriotism to our rainbow nation. Ramon has spent this year working at three schools in the Intermediate Phase.



Kirsten Zsilavec

Advanced Phase Facilitator/Assessor

Kirsten Zsilavec comes from a background of organic growing - she completed an apprenticeship in sustainable land-use management at the University of California in Santa Cruz, and for the last 15 years has been working at organic and Permaculture gardens and farms. Since she joined seed two and a half years ago, education has become her passion and she has helped develop the Curriculum for Growing. Kirsten feels that her work with SEED has been a two-way process - one of sharing her skills

and knowledge with educators, learners and fellow fieldworkers, as well as enabling educators and learners to change to more sustainable life styles.

Galiema Begg

Permaculture Facilitator

Galiema grew up on the Cape Flats. Having developed an interest in holistic lifestyles, she worked for the Macrobiotic Institute while living in Miami . There she studied Art Law at Miami Community College . On her return to South Africa she worked as a reviewer with the United Nations Educational Program and then completed a certificate course in Herbal Nutrition and Medicine, and worked for the Medicinal and Edible Gardens Association on nutrition activities. Before joining SEED she completed a practical Permaculture Course with Kent Cooper and Alex Kruger. Galiema has worked at one school this year.



Sharon Mondell

Nursery Facilitator

Sharon started as a volunteer at SEED's nursery and is now selling Permaculture plants to SEED. Sharon grew up on a farm in Jakkelsvlei (now Heideveld) where her family had a nursery. After raising 3 children as a widowed parent she has recently found the time to explore her lifelong interest in plants. She did courses at the Dept of Agriculture (Elsenberg) including Vegetable Production and has completed a Permaculture Design Course. Sharon looks forward to developing the SEED Nursery as a sustainable business.



Staff Development

SEED is finding the Workplace Skills Plan a really useful tool for skilling up staff and improving out delivery.



Kent Cooper works during the Generic Garden Workshop

Assessor Training

Kirsten and Leigh are now registered Assessors - after finishing the gruelling (and sometimes just plain unpleasant) Assessor Course. This is something we will start recommending for Facilitators as it really clears up the assessment process and will make our work in supporting teachers more effective.

Emerging Environmental Provider Support Programme EEPS

SEED was selected to undertake this process towards full Organisation Accreditation. We covered the following unit standards: Quality Management Systems, Developing Environmental Learning Programs/Materials, and Facilitate and Evaluate an Environmental Learning Course. More importantly SEED is now provisionally accredited with the ETDP SETA. The workshops were held at WESSA in Howick.

CTI Course

Two week Environmental Education Course "Creating a Curriculum for Sustainable Development in the Intermediate Phase". This looked at furthering understanding of the Curriculum, its implementation and its link to Environmental Education. It also allowed continuous interaction with Educators to understand the processes they go through in their work. SEED staff attended some (Mzukisi) or all (Kirsten) of the sessions with the fifty teacher participants.



Leigh and Kirsten plough through the Assessor Training



Facilitation training

Mzukisi Zele attended a 10 day course on facilitation in October 2006 with Educo Africa. It covered basic skills on planning and different approaches to use when facilitating. Mzu says he gained more in-depth knowledge on facilitation and how to be flexible when situations rise, like language problems, low literacy or slow learners as well as how to arrange the venue and communication. The final stage of course is for Mzu to present a demonstration lesson at a school for assessment by Educo. This can only be completed after the Teachers strike is over or the schools are operating normally.

CAPE Curriculum workshop

Mzukisi, Thembelani and Galiema from SEED also attended the CAPE (Cape Action for People and the Environment) curriculum workshop at Kirstenbosch Research Centre. This was facilitated by Dr Eureka Rosenberg. It provided an overview of the environmental themes in the school curriculum. Participants also received a new set of curriculum materials designed especially for service providers who have to work with the curriculum on a part-time basis. In addition to basic introductory stuff there were in-depth discussions. SEED staff and other participants were joined by Dept of Education officials doing the Rhodes/CAPE/Gold Fields Environmental Education course.

Generic Garden workshops

With the challenging conditions for gardening on the Cape Flats, we have realised the need to develop a generic Permaculture garden that is easy to replicate and provides a clear demonstration for new facilitators. Gardens for education need to be diverse and dynamic enough to stimulate learning and provide a broad platform for effective delivery of all 8 learning areas of the outcomes based school curriculum. SEED spent five very productive days working with Kent Cooper to design and develop the first of these gardens at Primrose Park Primary in Manenberg. Our work was mainly around addressing low soil nu-

trient levels and increasing productivity. Chicken tractors helped get manure production on-site. Attention was also given to defining our zones, including separating our salad beds from our small crops and building up an orchard. Beds were standardized to fit the chicken tractors and provide more productive bed area relative to paths. SEED also moved away from the use of raised beds (beloved of Permaculturalists on heavier soils) on the Cape Flats as they increase exposure to wind, as well as water run-off from the water-repellent sand. SEED is now hard at work rolling this generic design out to all on the Cape Flats schools. The process was useful in highlighting the need to customize Permaculture techniques to local climatic and soil conditions.



Permaculture Design Certificate

SEED staff also attended a Natural Farming Course in Noordhoek, facilitated by veteran Permaculturalists Tim Wigley and Chatelaine Tayler. Sheet mulching, compost making and design skills were honed, and we learnt even more about earthworms! A new technique was the planting tower for using grey water to grow food in a small space – ideal for congested Cape Flats' communities. What also emerged from the course was a sense of the spiritual, ethical and intuitive basis of Permaculture. These aspects are not always fully developed in a society that emphasizes economic and technological perspectives.

SEED staff also did field trips to other Permaculture Projects to expand their Permaculture knowledge, see new techniques and hear about the experiences of others. These field tutorials included visits to:

Spier Wine Estate near Stellenbosch, where there is a private project to build an earth brick house and associated Permaculture systems. Of interest were the conversion of an existing vineyard to produce a biodynamic wine (which involved a pile of mulch bigger than the average Cape Town House). There was also an olive orchard and fruit-tree orchard. The chicken care techniques were comprehensive-very happy birds.

The Shaster Foundation project in at Monwabisi Park, Khayelitsha. SEED was fascinated to see a double storey timber-frame and sandbag house in the last stages of construction. The double storey house will be powered by renewable energy and will accommodate tourists wishing to experience life in the midst of a tightly-knit shack community in relative comfort. A good illustration of the application of Permaculture principles. SEED was invited to work at the nearby school!

Community Poultry Development Services in Khayelitsha. Thembelani assisted with the planting of the garden, and observed Permaculturalist Chatelaine Tayler's technique for adding minerals and nutrients to the infertile Cape Flats soil.

Ramon and Leigh were very excited by this pile of mulch at the Spier Estate. SEED looks forward to this kind of abundance



"Facilitator, Tim Wigley, teaching the fine art of compost making."



Message from SEEDs Project Coordinator



It has been another huge year for SEED as we move towards independence, formal accreditation and the start of the national program.

At home, the social fabric of Cape Flats' society feels as though it is unravelling and primary school learners are being affected by drug problems, gang violence and the associated pressures caused by unemployment. There is little place for them to be children and to find their individual

strengths that they will need to draw on later in life. We have questioned the relevance of our work in the face of this situation and realised that our work is all the more important as a metaphor for social transformation. We see Permaculture gardens as being places where learners can gain peace, esteem and hope and through transforming their school grounds realise their power to transform their lives.

We also find ourselves dealing with really tired teachers. We feel that township teachers are totally under appreciated – their jobs go way beyond the call of duty in this world of both parents working and the immense socio economic hangover of apartheid. They are often social workers, nurses, day mothers and teachers all rolled into one. They have grappled with the new education system and its administrative demands, have attended all the workshops and are now gatvol. This is largely what has informed our shift in accreditation focus – teachers do not want to attend training that needs a “portfolio of evidence” at the end. So we now focus on really supporting teachers to deliver the NCS (through Permaculture) and working at encouraging joy and enthusiasm.

We now turn our attention to Permaculture Facilitator Training – The biggest factor limiting expanded delivery of Permaculture nationally is the shortage of skilled facilitators. We look forward to running the pilot of the Perm Ed (Permaculture Educator's) short course (3 unit standards) later this year and realise the immense potential that this work has to formally develop a career path for Permaculturists.

On the National Program front we look forward to working with three amazing Permaculturists: Alex Kruger, Philippa Malluc and Tina de Waal. We look forward to the shared learning and formalisation of our school process.

I find it amazing to work in this country of immense diversity and edge. I feel very privileged to work in such a challenging environment - in six years I don't think I've been bored once. I thank SEED staff, partners, funders and school for their belief in what we are working towards. Bring on another year!





Message from SEED's Board

Kevin Pretorius, Principal of Rocklands Primary School in Mitchell's Plain (and SEED's Vice-Chairperson) represented SEED in April 2007 at a regional Permaculture workshop in Harare, Zimbabwe. Delegates from Zambia, Malawi, Kenya, Uganda, Zimbabwe and South Africa attended the 16 day workshop. The main focus was Permaculture and the process of Integrated Land Use Design (ILUD) at schools.

"This was indeed a life-changing experience. Not only was I overwhelmed by the breathtaking beauty of Zimbabwe but more so by the wealth of knowledge assembled in our lecture room. Theory classes were followed by practical sessions at a local school where we could put our new skills to practice - water harvesting, soil management, doing transects, using of A-frames, uses of herbs and much more - I even dug trenches and started a compost heap.

The mission given to us was to take the ILUD process and introduce it to all South African schools. This might seem like a mammoth task but one that is indeed doable if enough people can be persuaded that the ILUD process and Permaculture are indeed the key to sustainable schools.

A key part of this is getting the endorsement and active support of all school stakeholders, including learners, teachers, parents, the Education Department at the

highest level, local government, religious/spiritual organizations and community leaders".

"The schools visited in Zimbabwe all bore testimony of the wonderful transformation that took place since the introduction of the ILUD process. Hopefully this will be our experience in South Africa over the next few years. A key realisation for me was that Permaculture is not just applicable to a small food garden area, but can be used to transform the whole school and its grounds. We are planning to invite at least 15 other schools to a presentation on Permaculture and the ILUD process, and how it has been applied in Zimbabwe. The outcome of that meeting should be an action plan to start this process in the 15 schools, with the support of SEED."

Kevin Pretorius in action at the Pelum workshop in Zimbabwe

"I now understand what we need to do - we should not grow food gardens around schools, but build schools in food gardens."

Kevin Pretorius, Rocklands Principal, SEED Board



Message from SETA

At SETA's AGM on 10th October 2006, Malusi Dyantyi (Zanmefundo aka Philippi K Primary) stepped down as Chairperson, and was replaced by Mary Possa (Lehlohonolo Primary). At that meeting it was decided that the way forward for SETA is to set up an Environmental Education resource centre for teachers. It was felt that teachers are presently over-workshopped and would find it difficult to attend many extra workshops. Access to resources on environmental themes (especially DVD's that can be shown in class) was seen as a way of relieving some of teachers' time pressure.



herbs and health workshop Zanemfundo - 23 May 07 - inside

The following DVD's are now available for loan to teachers at the SEED office:

"The Future of Food" looks at the industrialization and globalization of food production. It highlights the loss of food plant diversity, and attempts to control the means of food production by global corporations through genetic engineering and patenting of food crops. It also looks at organic farming as a sustainable alternative to industrial agriculture.

"Hidden Dangers in Kid's Meals" contains 3 parts:

- Why remove genetically engineered foods from schools?
- Health dangers of genetically engineered foods.
- The impact of healthy food on learning and behaviour at a Wisconsin (USA) school. The last part is of particular interest to teachers. It shows how at a high school in the USA learner behaviour and academic performance were improved and problems like vandalism were greatly reduced when the school cut out all junk foods and replaced them with whole foods (unrefined foods, vegetables, fruit etc).

"Ride the Renewable Wave" is a short (5minute) introduction to renewable energy (wind and solar energy) from a USA-based organization.

"The Power of Community" looks at the energy shortage experienced by Cuba when the Soviet Union collapsed in the late 1980's. The changes that Cuba had to make to transportation, housing and food production are put forward as examples of the kind of changes ALL other countries will have to make after 2010, when half of the Earth's oil would have been used up (so called "peak oil"). Part of the film looks at how Australian Permaculturalists came to Cuba to help transform Cuba's food production system (which was heavily reliant on tractors, fertilizers and pesticides) and prevented mass starvation. Now over 80% of Cuba's food is produced organically. Viva Permaculture!

Coming soon:

"Helping nature help you" is a 13 part series of 5 minute segments on Permaculture. Made in SA, it is set at a school and stars well-known Permaculturalist J.J. (John) Nzira and two primary school

learners. It is suitable for learners.

"The Global Gardener" a series of four half-hour programs by one of the founders of Permaculture Bill Mollison. Each episode looks at examples in different bioregions, including Arid Lands- Reversing desertification in Arizona, Botswana and Australia and Urban- New York City and Harare, Zimbabwe.

SETA members attended a workshop on **"Herbs and Health"** at Zanemfundo Primary School on 23rd May 2007.

The new date for the SETA meeting is now pending the end of the Public Sector Strike. On the agenda for the next SETA meeting is the possibility of SETA supporting the drive by Rocklands Primary Principal Kevin Pretorius to roll out Integrated Land Use Design at other schools on the Cape Flats. (Integrated Land Use Design is based on Permaculture).



Highlights from the year that was:

Working with awesome people.

Our regular feedback/network/support sessions with SEED family.
SEEDs responsiveness to change and the fact that it is changed from the ground up.
Every visit to the schools in true respect, by talking & listening to the beautiful people of Cape Town about their Hills & Valleys that we all experience in some way or the other.



SEEDs new Intermediate Phase Textbook:

Our new text book is out and already being used at a national level through Old Mutuals "Out the Box" scheme.

CTI course facilitated for the second time.

The second CTI Course was facilitated from 21 May - 1 July 2007 and saw 50 educators and 9 EE organisations working on "Creating a curriculum for sustainable development in the Intermediate Phase". It was held at the Cape Teacher's Institute (CTI) in Kuils River. The course was facilitated by Alex Kruger and its success manifested in the petition the educators put together at the end. This asked the Department of Education to expose more of its managing staff to the course so as to better support education for sustainable development at schools.

Alex Kruger facilitating the second CTI course



SEED is independent!

SEEDs exciting news is that we are officially operating as an independent NPO. After growing strong under Abalimi's wing over the last six years, we feel ready to make it on our own.

Kevin Pretorions attending the PELUM workshop in Zimbabwe.

Kevin is principle of Rocklands, Vice-Chair of our board and has come back from Zimbabwe enthused and on fire. We are now supporting his plan to extend ILUD whole-school Permaculture (Integrated Land Use Design) to other schools. SEED is encouraged that the rollout of Permaculture to schools is being driven by one of SEED's schools. We hope that this initiative from Rocklands will be widely supported by teachers and that such a school-driven initiative will better meet the needs on the ground.



Having Jenny Smuts - volunteer extraordinaire donates her time to SEED

SEED has applications from 28 schools on the Cape Flats and Overberg to join SEED's program.

Rocklands Primary winning the Western Cape Eduplant competition.



Leigh with Brian Wright, from WESSA, wade through the Accreditation process

Working on the WESSA EEPSP Program

SEED was supported by the Emerging Environmental Provider Support Program (EEPSP) funded by the WWF and Implemented by WESSA. The EEPSP helped SEED to become a fully accredited training organisation with the ETDP Seta. SEED thanks Brian Wright for his energy and commitment to this process which really took us to the next level!

The Ecoschool flag ceremony at Montagu Drive Primary School.

Montagu Drive Primary was recently awarded its flag and Lehlohonolo and Rocklands have received their flags for a second year running.

Successful trial crop of indigenous grains sorghum and pearl millet at SEED's Office.

This showed that these have potential as summer cover crops on the Cape Flats.

SEED's nursery producing its own Permaculture plants.

This is thanks to the work of Sharon Mondell, who started working in the nursery as a volunteer and now grows on order for SEED. SEED's ability to produce its own plants (rather than buying these in from commercial suppliers) supports the strategy of developing food and useful plant varieties that are adapted to Cape Flats' conditions, and with ownership of these genetic resources held by SEED and local school gardeners.



Mzu with the Sorghum trail crop



More Highlights:

The re-introduction of standardized chicken tractors at four SEED schools.



This is part of a strategy to increase soil nitrogen levels to enhance vegetable production. Security concerns at schools prevent chicken tractors from being more widely used at this time.

Rocklands Primary selling culinary herbs.

The production of culinary herbs for drying and packaging at Rocklands Primary.

These are being sold in the local community.

Herbs thrive in Cape Flats' conditions.

Herb workshops were also held at Lehlohonolo and Zanemfundo Primary Schools. These linked the herbs being grown in the SEED gardens to themes like nutrition, plant-based health care and traditional medicine systems (including traditional African healing). These workshops were attended by teachers from several schools. There are indications that herbs could be a rewarding source of income for schools, especially if they are given added value through processing and packaging. There are possibilities of SEED expanding production of aromatic plants for essential oils at schools. This depends on the availability of low-cost local processing facilities: Self-Help Manenberg is planning an industrial-scale essential oil still at Phoenix High (lavender production).



Many hands make light work

Sustainable Schools Program

SEEDs Sustainable Schools Program partners schools for three years. The exit strategy ensures that at the end of the program there is a sustainable Permaculture system in place providing for food security and serving as an education tool. Linked to the Permaculture systems, is an entrepreneurial component which generates sufficient income from the garden to employ one community member, thereby ensuring the ongoing nurturing and maintenance of the school garden.



Exploring the worm bin

The Phases

Participating schools pass through three phases in the project- each with a slightly different focus.



Rocklands learner brings her organic waste from home

The Nursery Phase

The Nursery Phase focuses on developing a food garden surrounded by the systems for sustainability as well as developing a broad-based understanding of Environmental Education at the school.

The Intermediate Phase

The Intermediate Phase is a year of focusing on developing entrepreneurial systems and getting schools to the point where SEED is able to begin withdrawing support. Schools at this phase will have a broad base of teacher support and will be engaging the community and surrounding schools.

The Advanced Phase

Once schools reach the Advanced Phase they operate on their own. SEED provides six days of trouble shooting and training. This is a further measure towards sustainability of the project as SEED is able to support schools through any problems they may experience and provide relevant training if needed.



the joy of gardening



The Intermediate Phase - Kannemeyer Primary Area: Grassy Park



The garden is in good hands

Champions:

Mr Samodien (Principal), Mr I.Reddy, Mr Arendse, The Enviroclub members

Systems Implemented:

5000 litre water tank, 250 litre water tank plus drip irrigation (the school supplied a drip irrigation system which was gathering dust. SEED helped install it. Perennial systems. herb garden, chicken tractor. Main garden has been redesigned with larger beds working on crop rotation.

Educational theme foci:

Introduction to the garden. Screening of "An Inconvenient Truth" for the Grade 7's

Highlights:

Mr Samodien's enthusiasm and passion to make a difference. Mr Arendse for his unmatched attitude, to not quitting in the face of challenging socio-economical circumstances

Challenges encountered:

Teachers fully occupied with a proprietary curriculum organization program. Additional interest for the garden has waned. Teachers are not in a position to commit to any additional workshops or extra mural activities.

Solutions found:

Still working on this with the principal

SUSTAINABILITY INDEX RATING	
	58
PHYSICAL SYSTEMS	40
SKILLS IN PLACE	67
ORGANISATION BUILDING	89
SCOPE	62
TOTAL	

Special project:

A Tranquillity Garden is planned as an amenity for users from Kannemeyer and other schools. The garden design includes a labyrinth, water feature, wind chimes and sensory herb spiral. It is envisaged as a place of healing and de-stressing, particularly for children from dysfunctional homes.

An extension of the SEED garden area is planned, however funding/ sponsorship is required for fencing. The intended area is adjacent to the playground and the plants would be damaged by ball-games etc. Herbs and produce are to be sold and marketed by the enviro-club members.



This chicken tractor was designed by the Grade 7 Technology class.

Kannemeyer Scarecrow

The Intermediate Phase - Fairview Primary Area: Grassy Park

SUSTAINABILITY INDEX RATING	
	39
PHYSICAL SYSTEMS	40
SKILLS IN PLACE	52
ORGANISATION BUILDING	69
SCOPE	69
TOTAL	

Champions:

Mrs Gallo, Ms Slamdien, Mr Orgell & groundstaff. Mr De Wet. Learners.
Physical Systems in place: Two 5000 litre water tanks. Perennial windbreaks, fencing. Groundcovers surrounding the garden, worm farm, chicken tractor, pit beds and compost site



New beds being laid out



Fairview learners are always very excited to work in the garden

Educational theme foci:

Grade 1: Introduction to garden. Grade 2: Introduction to garden and earthworms. Grade 4: Introduction to garden Grade 5: Introduction to garden and Chicken tractor (N/S, L.O & Technology). Grade 6: Pit beds (N/S & L.O.)

Highlights:

The proactivity amongst teachers, ground staff and learners

Challenges:

Not enough time in the day to handle all E.E requests from teachers - a good sign! This school could easily soak up the outputs of two facilitators. Attention to garden maintenance for it to thrive. Lots of organic material input needed because of very depleted soils. (The pit beds have helped in this regard). Incidents of theft e.g. loss of initial first 3 chickens.



Fairview before the food garden was implemented

Solutions found:

Fence which controls access to the garden. Chicken tractor running and improving soil nutrient status. Compost making started. Message sent out with learners to community to watch theft of chickens-so far this is working...

Entrepreneurial project:

Will be starting a culinary & medicinal herb project with learners & teachers.



The Intermediate Phase - Montagu Drive Primary Area: Mitchell's Plain

Champions:

Ms Kennedy, Mrs Goliath, Mrs Smith, Mr Pietersen and especially the Principal Mrs Sasmen.

Systems Implemented:

2500 litre and 5000 litre water tank. Shelter belts (windbreaks planted), fences covered in shade netting (additional wind protection), garden beds completely re-designed (larger, standardized beds for chicken tractor), 2 x chicken tractors plus chicken cage, perennial herb strips, sun-dial central feature, worm bin.

Permaculture and Food Production:

Chickens got out and feasted on garden! Harvested spinach, beans and peas. Chickens produced some eggs. Sunflowers did well-fed to chickens.

Educational theme foci:

Introduction to the garden.

SUSTAINABILITY INDEX RATING	
PHYSICAL SYSTEMS	39
SKILLS IN PLACE	20
ORGANISATION BUILDING	37
SCOPE	65
TOTAL	40

Highlights:

The use of edible plants in tuck shop. The great interest shown by the learners in the chickens. The great enthusiasm and hard work by volunteers Jenny Smuts and Andrew (Nizar) Issa from California. The award of an Eco-schools flag to Montagu. The summer crop has yielded a reference for soil nutrition- potassium, nitrogen, magnesium, calcium depletion.

Challenges encountered:

Diversity of soil type presented by the 15mx10m area suggests a sandy soil in one corner, wet soil in another. Chickens being let loose from the chicken tractor. Uncontrolled access to the garden outside school hours caused chaos.



The new garden layout at Montagu



Learners plant up the windbreak

Solutions found:

Organic fertilizers (bone meal, lime, manure) for sandy, leached soil. . Harvesting of run-off water, windbreaks and other ways to prevent water-loss. Swales for lower slopes and water-wise plants for shelter belts.

Entrepreneurial project:

It was suggested that there is a good demand for organic halaal chickens in the area. Experience has been gained in animal nutrition for production. SEED can better gauge the production of chicken food from the garden in relation to the expected yield of chicken or eggs. It could be turned into an income generating project if we can find suitable facilities to slaughter and dress the chickens.



Learners at Montagu

The Intermediate Phase - Primrose Park Primary Area: Mannenberg



primrose after 3 months



Primrose learners love their herbs

Champions:

Mr M. Abrahams, as well as the Principal Mr R. Abrahams.

Systems Implemented:

Windbreak, food forest, medicinal plants, worm farm, drip irrigation, compost pit.

Educational theme foci:

Since the beginning of the year, each grade has had a general experiential introduction to the garden: mulching, planting, worm farms, windbreaks.

Highlights:

Supplying carrots, onion chives, parsley and spinach for the soup kitchen at least once a week since March.

Listening to two boys telling me how they made 'perfume' by soaking herbs in water.

Having learners come up to me and telling me how they have started a vegetable garden at home or have learned about something relating to the garden.

Challenges encountered:

The novelty of the garden (as is) for all the educators and their lack of skills in using the garden as an educational tool
The SEED leader teacher leaving the school at the end of June 2007 to take up

a position overseas. The declining pool of skilled teachers was an issue of deep concern mentioned by teachers during the Public Sector Strike. The reasons for the strike by teachers appear to go far beyond their remuneration.

Solutions found:

Introducing the garden to the educators together with their learners.
Workshopping with the other educators on how they would like to use the garden as an educational tool

Entrepreneurial project:

The work in progress is on contacting Fairest Cape Association to join a recycling programme. Recycling has been a rewarding source of income for other SEED schools such as Rocklands Primary. Extending environmental awareness to the majority of teachers and learners is a pre-condition for success.

Children/teacher quote: "Can I take this to my mom?" - the most asked question after each child picking a herb leaf, smelling it and sharing it - part of the introduction to the garden.



SUSTAINABILITY INDEX RATING	
PHYSICAL SYSTEMS	44
SKILLS IN PLACE	44
ORGANISATION BUILDING	45
SCOPE	25
TOTAL	49



Advanced Phase - Lehlohonoto Primary

Area: Gugulethu



Champions:

Mary Possa, Mr White, Mrs Zantsi
(Principal)

Systems Implemented:

Weather station, newly designed food garden with intensified edges, fences, 2 rain tanks, food forest.

Educational theme foci:

Introductory lessons to the garden. Healthy diet and personal health in Life Orientation and listening skills in Languages

Highlights:

Watching learners start to blossom in the garden.

Challenges encountered:

School closed during teacher's strike. Learners tend to be slow when English is being used as a medium of instruction. The answer comes easy when asked the same question in mother tongue. Learners not being able to access healthy food due to insufficient finance. SEED needs to greatly increase food production at the school.

Solutions found:

Should focus more on developing the learners' English skills

SUSTAINABILITY INDEX RATING	
PHYSICAL SYSTEMS	44
SKILLS IN PLACE	54
ORGANISATION BUILDING	67
SCOPE	71
TOTAL	54

Entrepreneurial project:

Looking at medicinal and culinary herbs. Ms Possa is already harvesting *Leonotus leonurus* (Lebake in Sotho, imVovo/umFin-cafincane-Xhosa) and selling the tea.



Lehlohonoto rain harvesting system all ready for winter

Top Left: New bed design

Left: Lehlohonoto learners hard at work

Advanced Phase - Masiphumelele Primary Area: Macassar, Khayelitsha



Masiphumelele-New beds
planted up

Champions:

Mr Galada, Mrs Matiwane
(Principal)

Systems Implemented:

Two rain tanks, drip irrigation system, indigenous windbreaks, outdoor classroom, food forest, composting system, food garden. The garden beds have been completely redone to flatten the profile (no more raised beds) and simplify production. Bird netting has been put up to protect each bed.

Educational theme foci:

Introductory lessons to the garden.
Healthy diet and personal health in
Life Orientation and listening skills
in Languages.

Highlights:

Learners knowledge about the garden
is fairly good. They also know that
healthy food comes from the garden.
They know the different nutrients
needed for a healthy diet.

SUSTAINABILITY INDEX RATING	
PHYSICAL SYSTEMS	35
SKILLS IN PLACE	31
ORGANISATION BUILDING	26
SCOPE	54
TOTAL	36

Challenges:

School closed during teacher's strike.
Learners' listening and answering skills
when it comes to English.

Solutions found:

Solutions found: Should focus on develop-
ing learner's English skills. Education on
different foodstuffs for different nutrients.



New bed design as part of
the MMS learning area



Advanced Phase - Zanemfundo Primary aka Philippi K Area: Philippi



Learners get to grips with worm farming

SUSTAINABILITY INDEX RATING	
PHYSICAL SYSTEMS	34
SKILLS IN PLACE	46
ORGANISATION BUILDING	34
SCOPE	80
TOTAL	41

Learners prepare new beds

Champions:

Mr Dyantyi and Mr Manqoyi

Systems Implemented

A re-designed garden (banner grass clumps moved to the peripheral shelter belt, standardised beds with flat profile). 10 000 litres in rain tank capacity installed.

Curriculum for Growing Covered:

Recycling and energy, Trees, Wind, Medicinal Plants, Soil, Water, Our Environment.

Educational theme foci:

Introductory lessons to the garden.
Listening skills in Languages

Highlights:

Seeing teachers attending the herb workshop identifying



medicinal plants in the garden. Clearing and planting of land for a separate community garden next to the SEED garden.

Challenges:

School closed during teacher's strike. Support for the SEED Project is not extended to all teachers at the school. Learners have difficulty when listening or answering in English.

Challenges encountered

Support from all teachers for SEED project. Issues around sharing garden with community members. Physical challenges are thin sandy topsoil and the garden being right at the back of the school (long way to walk to water and care for it).

Solutions implemented:

Should focus on developing learners on their English skills? with ?Installation of 10 000 litre rainwater tank with pipe to garden drip irrigation is being installed.

Partnerships:

Eco-schools programme

Looking ahead:

Developing herb gardens for sales.

Graduated - Rocklands Primary Area: Mitchell's Plain

Champions:

Mrs CheeMee, Mr Pretorius and many volunteer learners

SUSTAINABILITY INDEX RATING	
	62
PHYSICAL SYSTEMS	77
SKILLS IN PLACE	68
ORGANISATION BUILDING	80
SCOPE	69
TOTAL	

Systems Implemented

Physical Systems in place: Earthworm farms, 2 x 5000litre rainwater tanks, food forest, vegetable production gardens, windbreaks, herb production labyrinth, medicinal garden, educational walk.

Current educational theme foci:

The garden as a financial resource: dried herb production & seed saving

Highlights:

The outreach between Mrs CheeMee and an educator at WestEnd Primary – they swop seeds, seedlings, ideas and inspirations, the use of vegetables in the feeding scheme, the introduction of salads from the garden, in the feeding scheme, the SEED Facilitator (Kirsten) being treated as one of the members of the school community, the support SEED has received from Mr Pretorius both as a board member and as a Principal of one of SEED's schools. Phoning the school to ask if I could bring some educators around and being told 'you do not have to ask'.

Hearing the Principal say: 'I now understand what we need to do - we should not put food gardens around schools but schools in food gargens?'. Note last line should not be detached.'



rocklands herbs for sale



learners in the Rockland Gardens



The herb labyrinth at Rocklands

Challenges encountered:

Getting more educators on board, getting more community members on board.

Solutions found:

Sending Mr Pretorius to a workshop on Integrated Land Use Design in Zimbabwe., Employing a community member, the payment of his services supported by the sale of dried herbs.

Entrepreneurial project:

The growing, drying and selling of dried culinary herbs, Children/teacher quote: "can I ask my teacher if I can work with you?" – the most frequently asked question at the end of break when work-play time is over.



Westville primary - Completed Advanced Phase June 2006

Area: Mitchell's Plain



Westville learners learning about running their nursery as a viable business.

Champions:

Mrs Theron, Mr Rhoda,

Physical Systems in place:

Nursery, Food Forest, vegetable beds protected by shade netting, outdoor classroom structure (framework). Ducks are still contributing to the liquid fertilizer system, and a goat was also added to the livestock.

Highlights:

Renewal of the vegetable beds with rock dust, bone meal, lime, mulch and manure purchased from SEED. SEED also supplied trays of organic vegetable seedlings at a low cost. These purchases were an indication of the schools commitment to keeping food gardening going.

Challenges:

The teachers championing the project are kept very busy. Weathering of signage and signs being placed with the wrong plants. Damage to Outdoor Classroom structure by wind. Problems with rainwater supply from tanks to where needed. Also overhead irrigation in nursery damaged before fence put up. Kweek grass invades food forest areas and limits growth of useful plants.

Solutions found:

Three month probation plan for proving schools ability to carry this project. Monthly workshops planned to strengthen teacher base.

Solutions found:

SEED visited the nursery, labelled the plants and drew up a stock list. The fax machine was found to be the best way to communicate with busy teachers!

Entrepreneurial project:

Small production nursery.

Children/teacher quote: "We have about 90% new staff since the start of the SEED Program and it has been a challenge to keep the SEED garden going through these changes" (Teacher)



learners placing tyres as seats in the outdoor classroom at westville primary.



Above: Chicken Workshop participants

Below: Teachers propagating herbs at workshop



Herb Workshop at Lehlohonolo

In October 2006 SEED held an Herb Workshop at Lehlohonolo Primary. Galiema Begg and Talfryn Harris facilitated.

There was a discussion around African traditional healing and how this relates to plant-based health care. The herbal origins of Western biomedicine were also explored. Participating teachers used plant material from the SEED garden to make *Bulbine* shampoo, infused lavender oil, thyme infusion for coughs, decoction of wilde dagga, lavender embrocating in Vaseline, sage milk for colds and flu and comfrey poultice for sprains and broken bones.

Teacher Development Workshops

Herb Workshop at Zanemfundo

The theme of the workshop hosted by Zanemfundo was 'Herbs and Health'. SEED facilitated a discussion on principles of nutrition-the food pyramid, and how a diet with large quantities of vegetables, fruit and salad (the base of the pyramid) keeps the body alkaline and disease free. (Bacteria and viruses flourish in acid conditions). Some short cuts to keep the body alkaline were demonstrated for communities where fruit and veg are not affordable or available. These shortcuts are hot lemon juice to start the day and herb teas! The antibacterial and digestive effects of the indigenous African mint were highlighted. Teachers then went into the garden where they looked for medicinal plants. They then used the books available prepare for a short presentation on their chosen medicinal plant.

Design Workshops at Heinz Park

Heinz Park was in the Intermediate Phase of SEED's 3 year program from July 2006. In October 2006 SEED decided to take them off the program as the school was due to move into new school premises, and the fate of the garden was uncertain. The school finally moved to the brand new school building in April 2007. SEED obtained funding to start putting Permaculture systems in place at the new school, with a view to putting the school back onto the SEED program in 2008.

To inform this process SEED held two after-

noon design workshops with teachers and community members from Heinz Park Primary. The outcome of this was broad agreement about how available land would be used and allocated: e.g. garden for community members and nursery (Soil for Life), shade trees and grass for learners, SEED Educational Garden, orchard, park area for public access and photographs (weddings and other functions).

This has allowed the installation of rain tanks, the development of the ornamental garden, fencing of the SEED garden and construction of the nursery to proceed.

Kirsten's Amazing Workshops

Kirsten did the 3-part series of afternoon workshops at 3 schools. These workshops introduce the concept of Environmental Education in the context of current environmental issues. Permaculture is discussed as a response to environmental concerns, and then the links between these and the Curriculum Statements is explored. Teachers got to look at the original curriculum documents (which many teachers have not done before!) and select outcomes that relate to Environmental Education. Teachers were often surprised to find environmental links not only in the Natural Sciences Learning Area but also in Learning Areas like MMS (Mathematics).





Evaluation

The Sustainability Index - December 2007



Facilitators hard at work at implementation meeting.

The Sustainability Index Process, November 2006.

The Sustainability Index (SI) is a tool developed by SEED to measure the sustainability of the gardens at SEED schools. This also serves to evaluate the impact of SEED's project. It has been facilitated twice a year since July 2005. A challenge in the use of the SI is to ensure that the results are not dependant on the person doing the SI assessments at each school. (I.e. that SI assessors are not too lenient or strict - many of the scores in the SI require some degree of discretion on the part of the SI assessor). Originally the SI assessments were done by the facilitator for that school, now it is done at all schools by SEED's Operations Manager. This means that results between schools are more comparable.

Looking back over the overall SI results from June 2005 to November 2006 it can be seen that:

A downward trend in overall SI scores is evident. This probably related to increasing impartiality on the part of the SI assessors.

Intakes of new schools into the Nursery Phase (June 2006 SI results) will lower the average SI score.

Some schools have always gotten high SI scores, whereas others have historically gotten low scores. This would indicate that factors such as organizational capacity, skills, soil and water and interest in gardening are characteristic of specific schools. Shifting these factors to increase sustainability at schools seems to be possible only to a limited extent.

SEED Strategic Review

SEED held its six-monthly strategic evaluation on 14th -15th November 2006. The first day was spent evaluating delivery for the last six months, and the second in planning for the next six months. It is really encouraging to see SEED staff



An evaluation process at the CTI course

members really commit to the work we are doing. While we are finding that the conditions we are working under seem to be getting more and more desperate, we believe that this work is needed more than ever. The widespread support for the teachers strike (even at schools which did not close) is an indicator that teachers are deeply concerned by the situation in SA education. In particular the shrinking pool of experienced, competent teachers in government schools was mentioned.

Looking forward



SEED staff all take part in the design of the Edith Stephens site

Edith Stephens Wetland Park

New Office space (and demo garden) at Edith Stephens Wetland Park

SEED has been offered an amazing 120m² garden space at Edith Stephens Wetland Park. We plan to develop this through a training process with community members. We believe that having a demo garden to teach from could open up a whole new way of work-

ing with teachers for short afternoon sessions. The Edith Stephens site also hosts educational tours to the wetland and medicinal plant gardens, and SEED intends to make the SEED garden a stop on this tour. As a site Edith Stephens has a strong educational focus, with organizations like the Primary Science Project also working with teachers on site. Also there is a large dam full of water hyacinth for mulching and compost making!

Launch of the Organic Classroom Program

2008 sees the launch of the Organic Classroom – the sleeker, more supportive program that emerged from the Sustainable Schools Program (which was piloted 2005-2007). This program sees SEED working with 20 Primary schools over 4 years. It has been greatly informed by input from SEED's on-ground School Facilitators.

National Program kicks off

We hope to kick this project off as soon as the money from the Lottery has finally arrived.

The office site at Edith Stephens



Launching SEED's accredited Permaculture Facilitator (Perm Ed) Course

The biggest factor limiting expanded delivery of Permaculture nationally is the shortage of skilled facilitators. There are a number of Permaculture unit standards that have already been developed. These Unit Standards focus on the basics of how to facilitate Permaculture and organic farming in communities and schools.

SEED is planning a short (4 week) course for latter 2007 to serve as a learning pilot towards the development of the full learnership and mentorship programme. SEED intends to set up a training centre that offers accredited applied Permaculture training. This centre would then host students working towards a full certificate at Level 5 on the National Qualifications Framework (NQF). The certificate will run over a full year and include course and on-ground work. Students will also practice in-situ work through working with local schools. Students could input on systems outside of the training centre (including SEED schools) in order to learn work with broad-scale systems..

SEED Website developed as Educational Resource

SEED's website will be developed to support schools to integrate Permaculture into the Curriculum – We see more Permaculture information and more accessible lesson plans.

The Chelsea Flower Show.

Garden Africa is working on a proposal with SEED for a stall at the 2008 CFS. – the stall would be a demonstration of a school garden..... watch this space.





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