

AMAOTI ORGANIC FARMING PROJECT

eThekweni Municipality

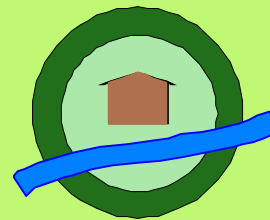
Development Concept Plan

Version 1 – 1st September 2005



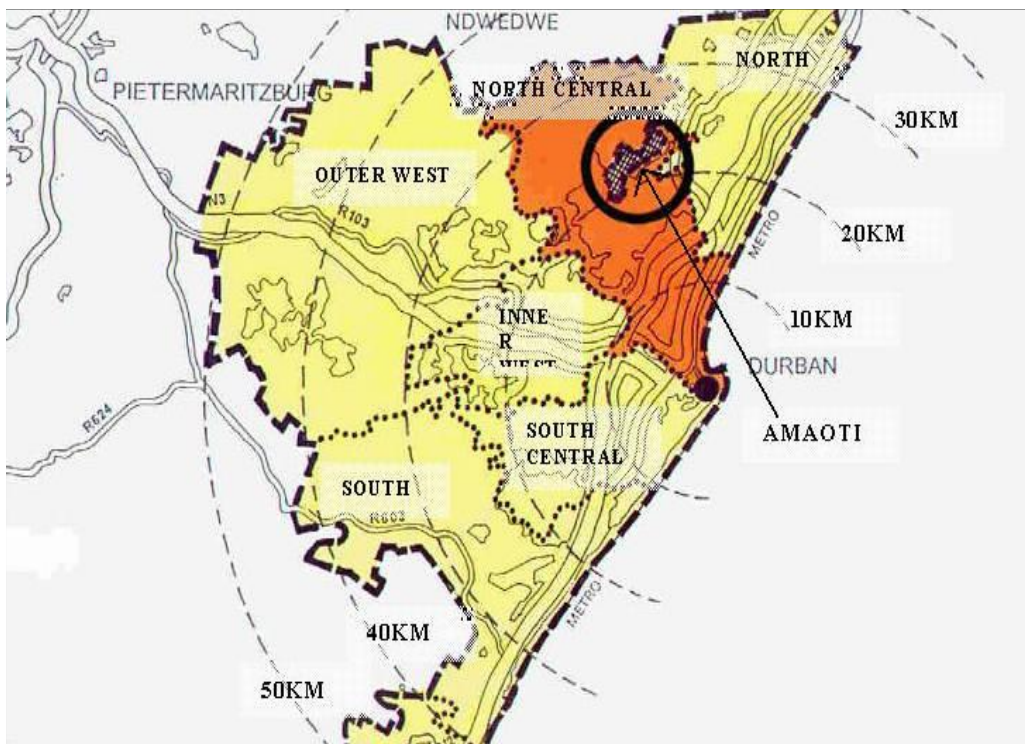
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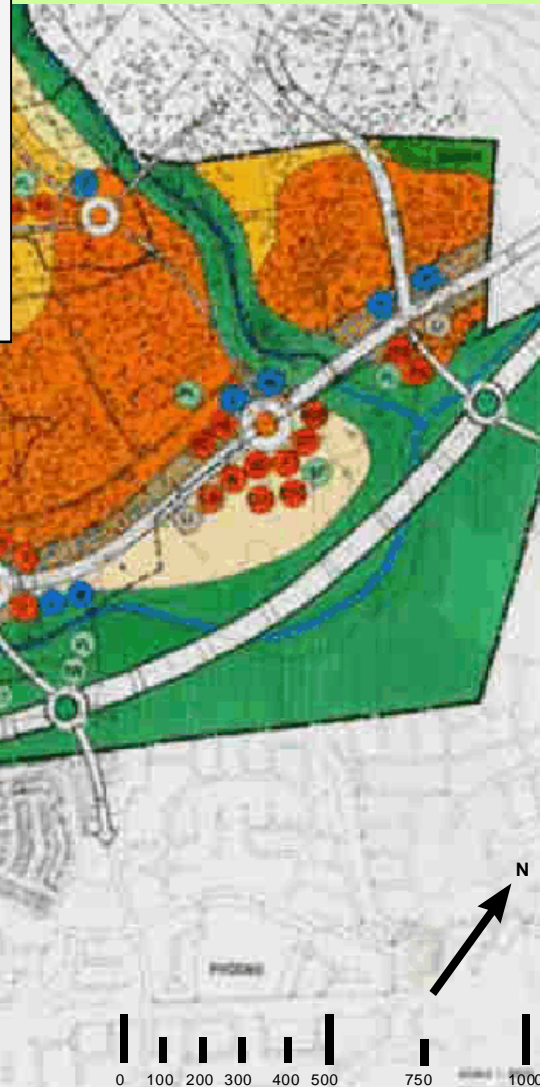


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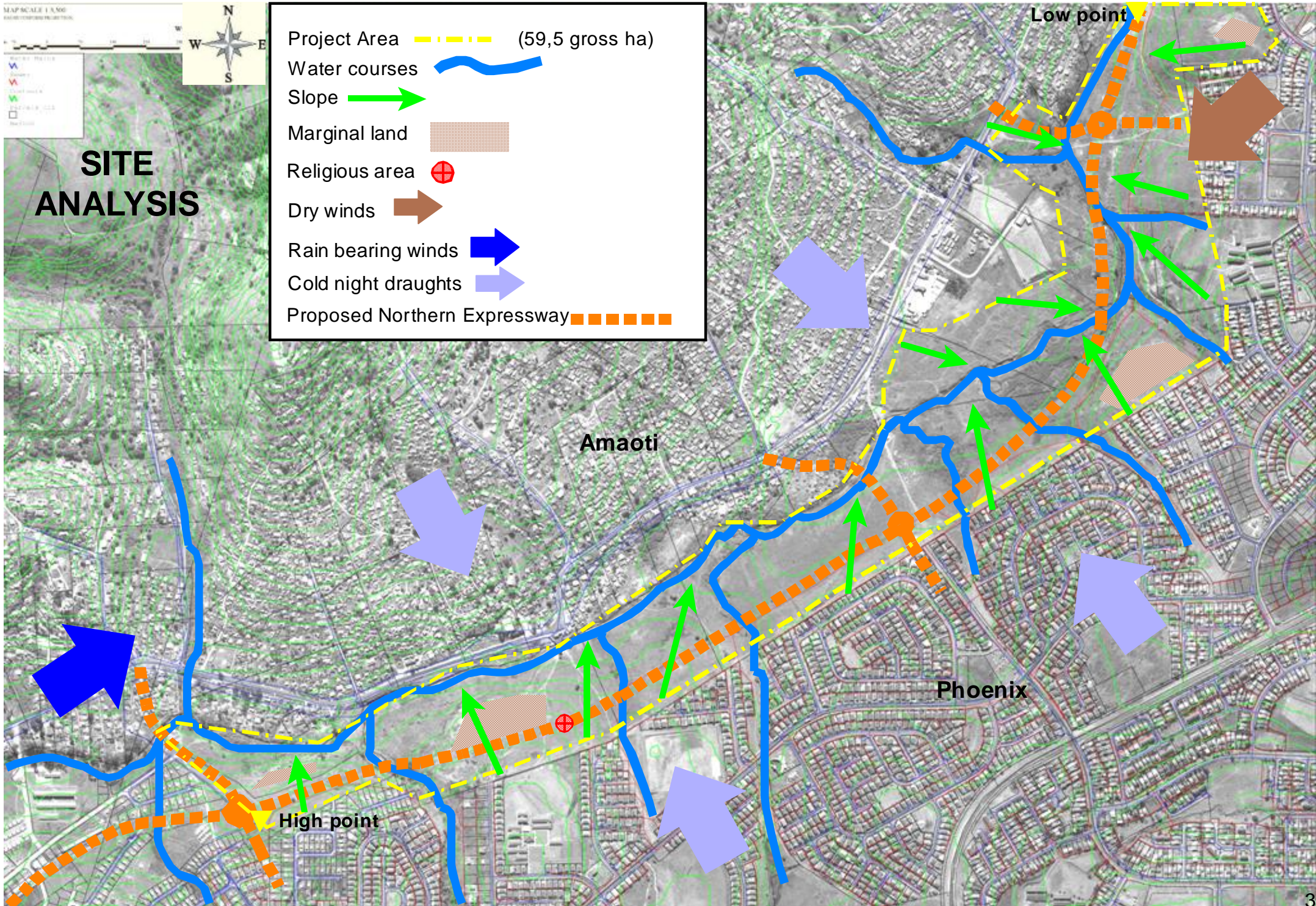
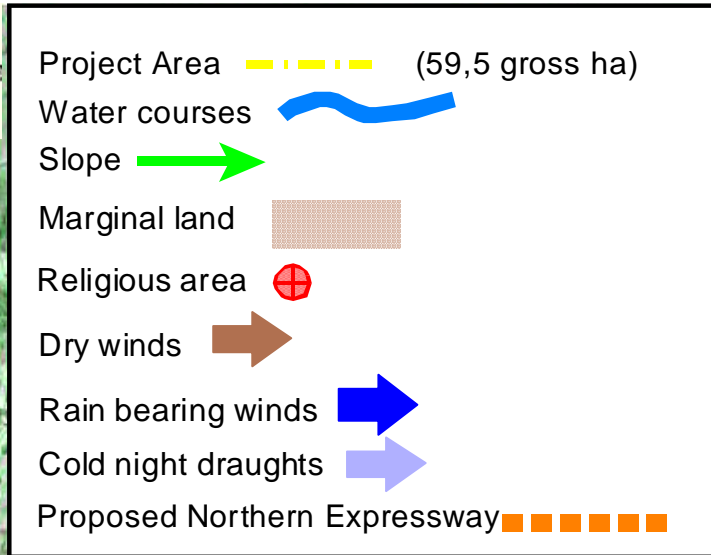
DEVELOPMENT CONTEXT



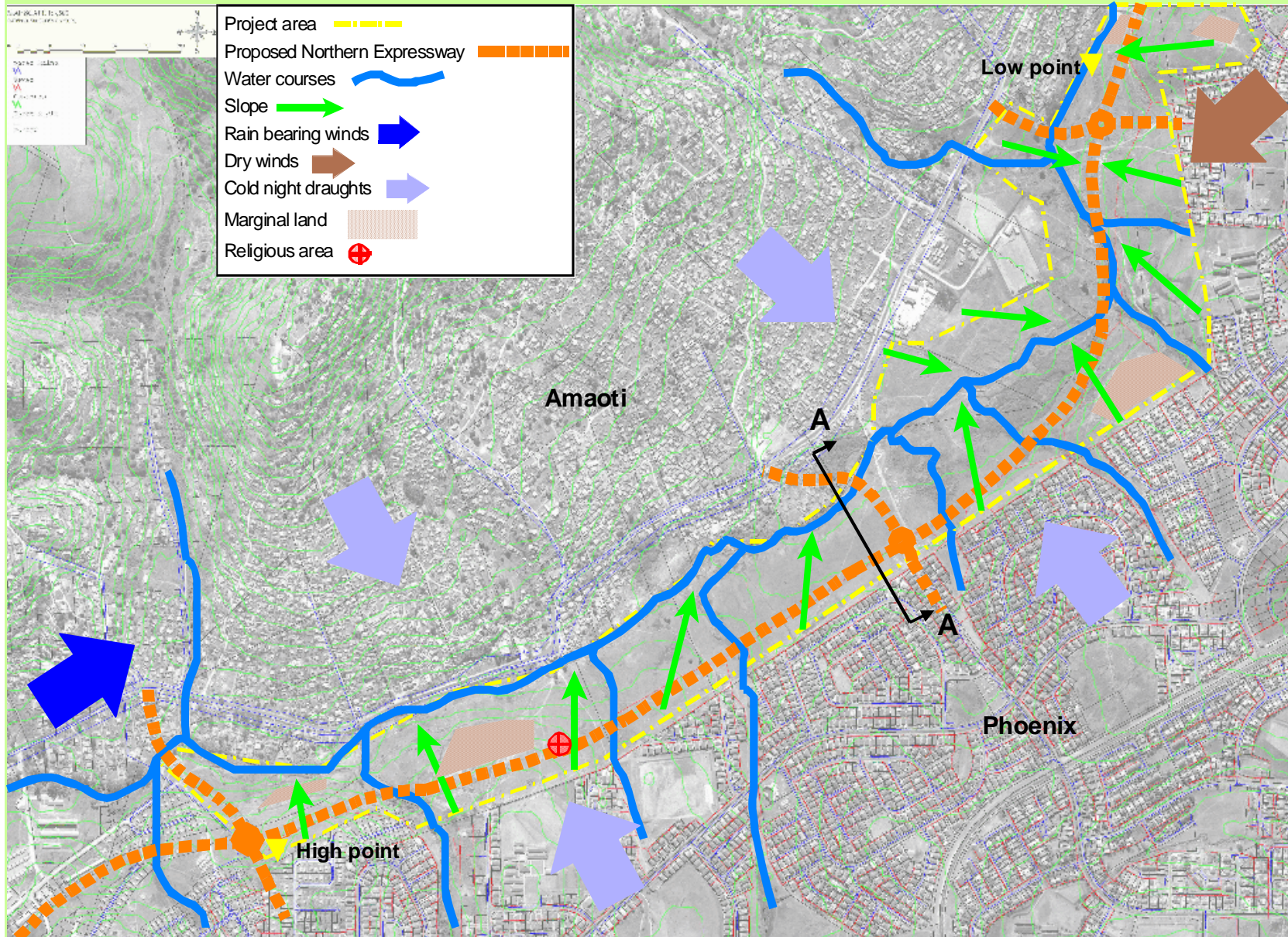
- Project area already identified as urban agricultural land within the Amaoti Development Framework Consolidated Report
- Originally a historical buffer strip between Amaoti and Phoenix
- Located within the Inanda Ntuzuma KwaMashu (INK) Urban Renewal Programme.
- Amaoti comprises some 53,000 people or 11,000 households
- Potential for community bridge building and agricultural opportunities
- Potential pilot urban agricultural project for INK
- Beneficiaries to be drawn from the Amaoti and INK areas



SITE ANALYSIS

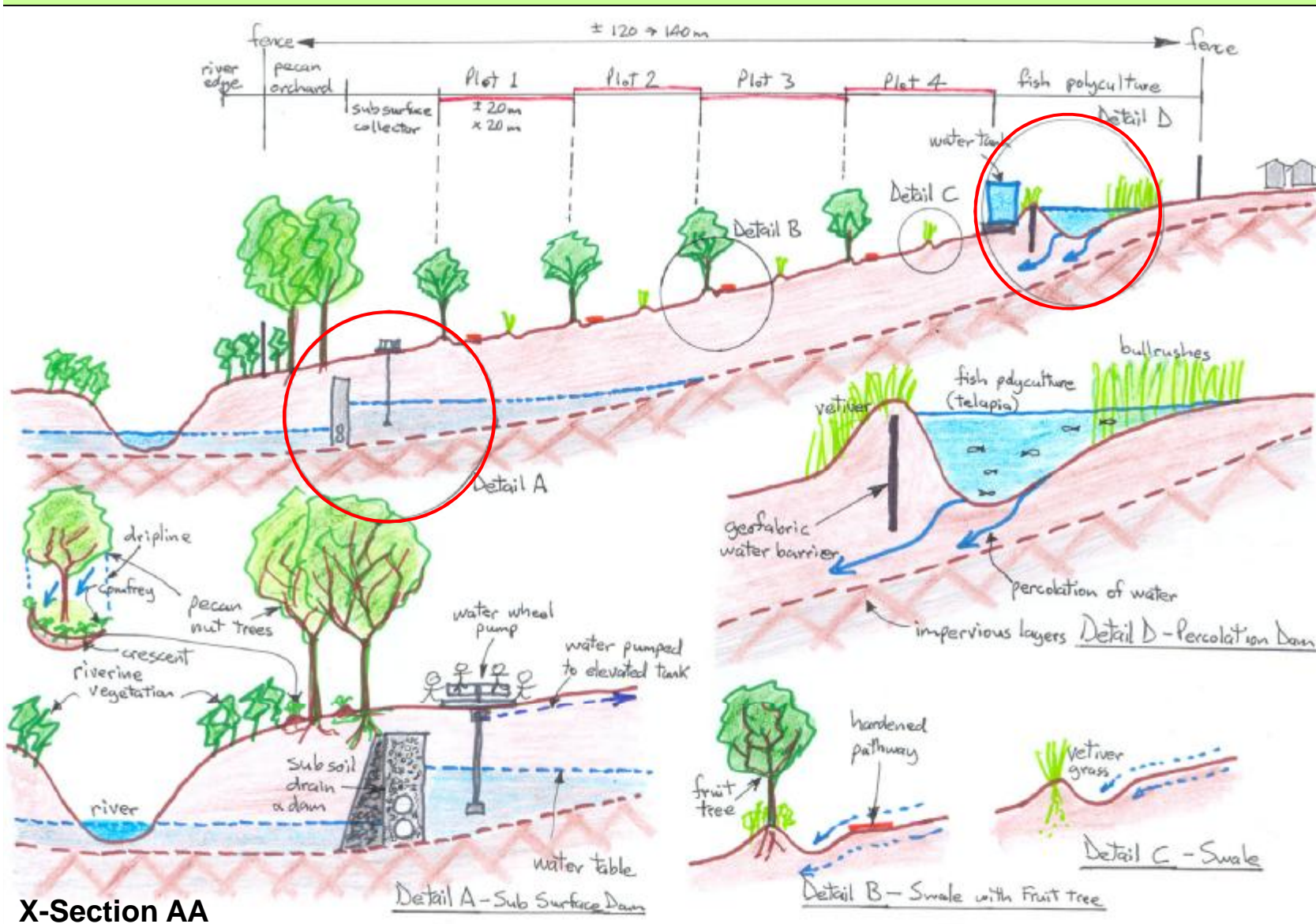


SITE ANALYSIS



- Agricultural design to mitigate against wind burn by establishing wind breaks
- Stormwater from nearby built environments can be trapped via detention ponds
- Opportunity to incorporate the proposed Northern Expressway as a design feature
- Opportunity to enhance groundwater seepage and raise the water table for crop irrigation

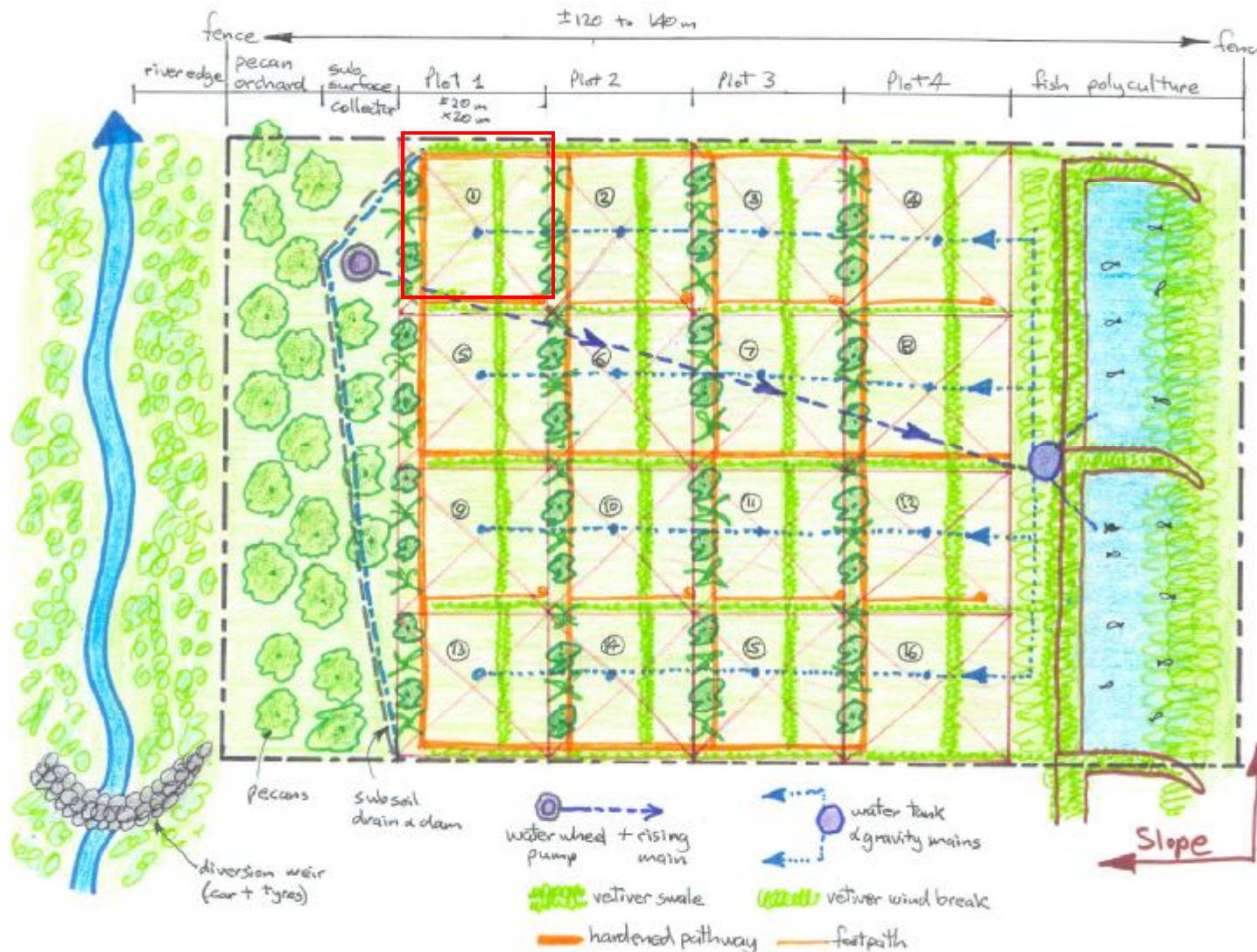
SITE DESIGN CONCEPT – RAINWATER HARVESTING



- Construct temporary percolation dams along the proposed alignment of the Northern Expressway to be replaced with detention ponds once this road is built
- Construct sub-surface dams alongside the Ohlanga River to enhance the water table
- Install water wheel pumps to abstract water table to holding tanks
- Construct check weirs in Ohlanga River to spread stormwater discharges
- Establish contour swales with vetiver grass
- Install gravity fed irrigation pipes from holding tanks

SITE DESIGN CONCEPT – ALLOTMENTS

Plan Section AA



- 20m by 20m grid bordered by swales and vetiver hedges provide a 400m² allotment
- Vetiver grass and fruit trees provide tree canopy, wind breaks and biomass
- 8 Adjacent allotments can be grouped for a polyculture of integrated rotation system of crops and chickens, thereby producing much needed manure and soil improvements
- A pecan nut orchard is proposed alongside the Ohlanga River
- A polyculture with tilapia fish can be established in the percolation dams
- LEISA principles minimise operating costs and create better income margins
- Income yields should be 2,5 to 3 times better than yields of conventional large scale agriculture
- Each allotment should be able to earn at least R3,600 per annum, but the direct economic value of these crops will be far higher

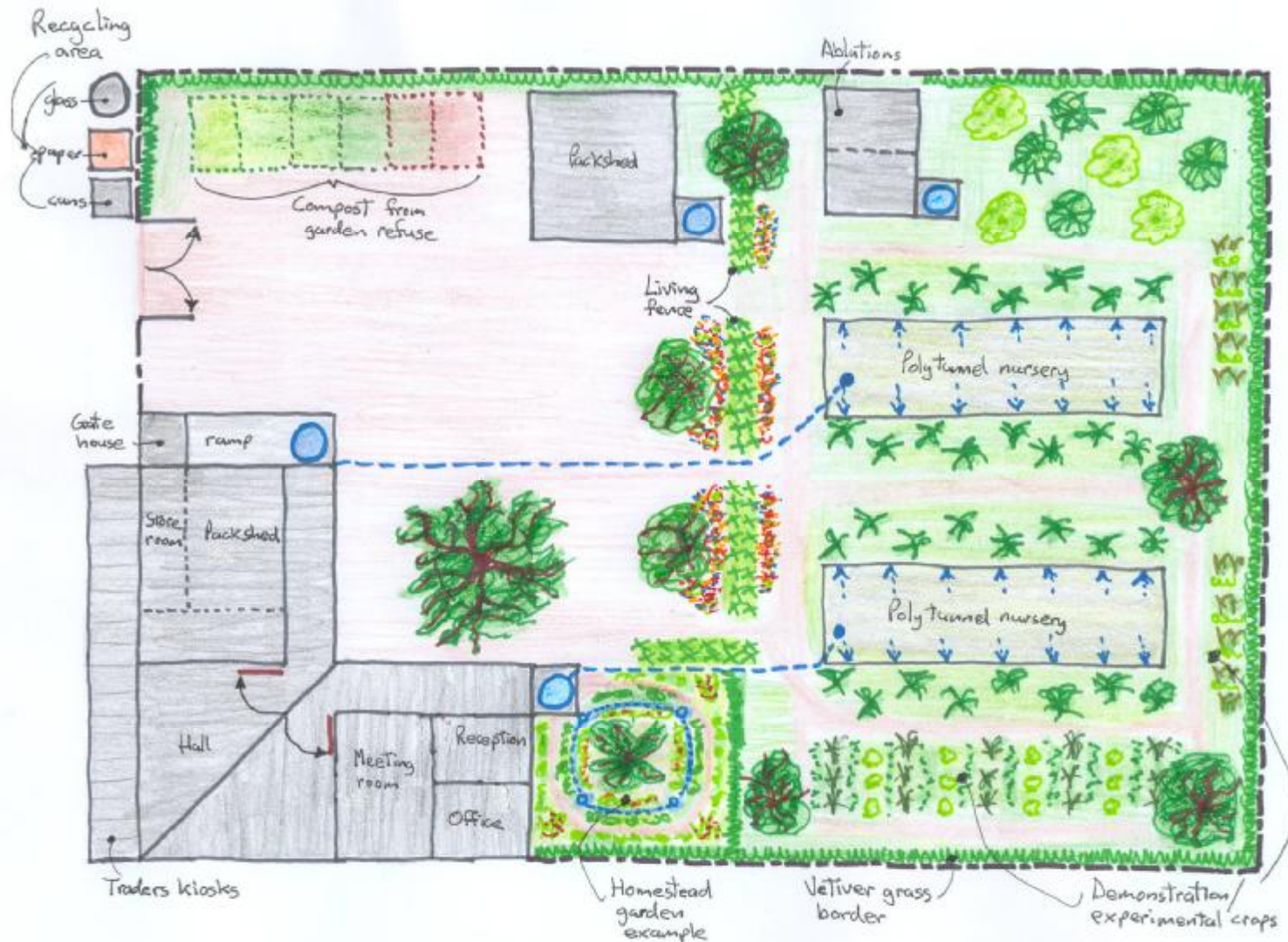
SITE DESIGN CONCEPT – HOMESTEAD GARDENS



- Initial trainees to become the new community based farm stewards to help establish some 1,000 homestead gardens
- Homestead gardens may entail all or a combination of, the establishment of rainwater harvesting systems; the installation of a rainwater tank; plant material; fruit and nut trees; and, small tools.
- Value of homestead gardens to be established via small loans up to R2,500 each, R2,000 value of goods and R500 paid to the farm steward upon completion
- Loan funding to be based on the Grameen Banking system which has minimal administration and low interest rates
- Bona fide loan applicants will need to provide loan collateral via 4 other households, who may not take out a loan themselves until the loan has been fully paid
- A loan guarantee fund worth 10% of the loan stock to be secured in order to entice a micro-finance service provider
- The scheme stops once the loan guarantee fund is exhausted

SITE DESIGN CONCEPT – FARMERS CO-OPERATIVE SUPPORT CENTRE

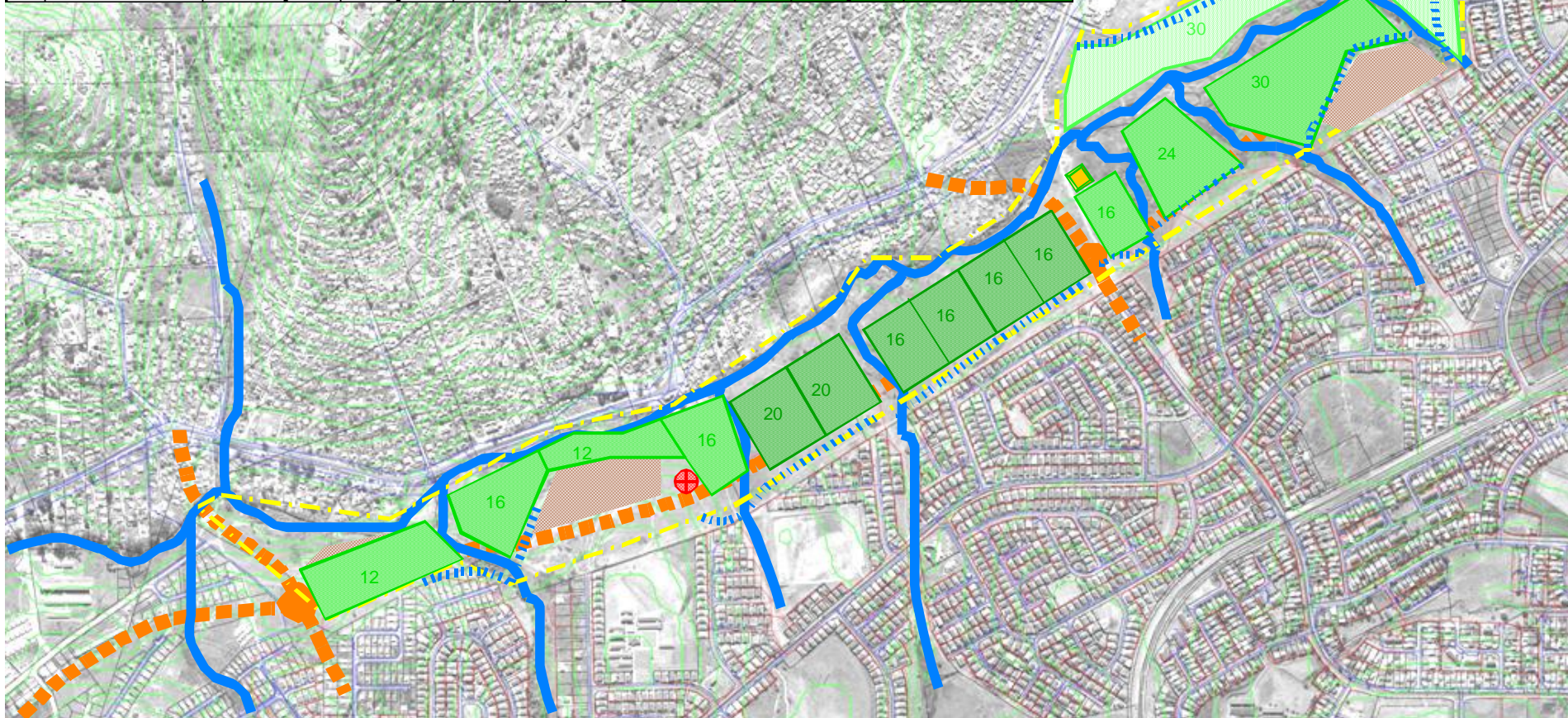
The scale of this project makes for a viable Farmers Co-operative Support Centre as an independent business unit in order to consolidate and deliver a wide range of functions, such as:-



- management and administration of allotments
- inspections for organic compliance
- administration of micro loans
- training and mentoring of farmers
- advisory services for farmers
- propagation of seeds and trees
- storage and exchange of seeds
- collection point for recycling of glass, paper and steel
- use of local garden refuse for large scale composting
- hiring of plant and equipment
- provide a trading platform on market days
- produce delivered for onward transport to other markets
- add value to niche produce such as packaging and marketing
- provide assistance to emerging SMEs

PROJECT PHASING

#	Task	Legend	2005		2006				2007				2008			
			Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
A	Project work plan															
B	Phase 1 - 104 Allotments															
C	Phase 2 - 126 Allotments															
D	Phase 3 - 108 Allotments															
E	Farmers Co-operative Support Centre															
F	Homestead gardens - 1000															



PROJECT BUDGET

Table 1 of 2

#	Task	Unit	Quantity	Rate	Sub-Totals	Bulk Unit Cost	Bulk Units	Total Cost	Cost/farmer	%
1	Project work plan					R 66,800	1	R 66,800	R 199	0.6%
1.1	Development Concept Plan	hours	32	R 400	R 12,800					
1.2	Business Plan	hours	120	R 400	R 48,000					
1.3	Funding mobilization	hours	24	R 250	R 6,000					
2	Training Learnerships					R 128,000	21	R 2,688,000	R 8,000	23.8%
2.1	Basic Permaculture / organic farming course	trainees	16	R 1,600	R 25,600					
2.2	Basic rainwater harvesting course	trainees	16	R 1,600	R 25,600					
2.3	Animal Production Systems course	trainees	16	R 1,600	R 25,600					
2.4	Facilitators / organic inspectors course	trainees	2	R 1,600	R 3,200					
2.5	Trainee in-service maintenance payments	trainees	16	R 3,000	R 48,000					
3	Farmers Co-operative Support Centre					R 891,920	1	R 891,920	R 2,655	7.9%
3.1	Design & Procurement	sum	1	12.0%	R 85,920					
3.2	Nursery infrastructure	sum	2	R 30,000	R 60,000					
3.3	Supply plant material	sum	1	R 40,000	R 40,000					
3.4	Building (offices, hall, store rooms)	m2	300	R 2,000	R 600,000					
3.5	Fencing	m	200	R 80	R 16,000					
3.6	Site supervision	months	6	R 15,000	R 90,000					
4	Planning & design					R 31,200	21	R 655,200	R 1,950	5.8%
4.1	Soil test pits	hours	16	R 1,000	R 16,000					
4.2	Detailed design	hours	24	R 500	R 12,000					
4.3	Site survey	hours	8	R 400	R 3,200					
5	Site Infrastructure					R 188,550	21	R 3,959,550	R 11,784	35.1%
5.1	Swales complete	m	640	R 30	R 19,200					
5.2	Percolation dam	m3	320	R 40	R 12,800					
5.3	Sub-surface dam & drain	m	95	R 10	R 950					
5.4	Hardened pathways	m	520	R 10	R 5,200					
5.5	Soil improvements	m2	5,120	R 10	R 51,200					
5.6	10ML Water tank	No.	1	R 10,000	R 10,000					
5.7	Water wheel & pump complete	No.	1	R 40,000	R 20,000					
5.8	Irrigation pipes complete	m	460	R 50	R 23,000					
5.9	Check weir in river bed (car tyres)	No.	1	R 15,000	R 15,000					
5.10	Small tools	trainees	16	R 500	R 8,000					
5.11	Fencing	m	290	R 80	R 23,200					

PROJECT BUDGET

Table 2 of 2





#	Task	Unit	Quantity	Rate	Sub-Totals	Bulk Unit Cost	Bulk Units	Total Cost	Cost/farmer	%
6	Plant Material					R 17,440	21	R 366,240	R 1,090	3.2%
6.1	Seedlings & small tools	trainees	16	R 1,000	R 16,000					
6.2	Fruit trees	number	32	R 20	R 640					
6.3	Pecan nut trees	number	20	R 40	R 800					
7	Homestead gardens (1000 No.)					R 463,000	1	R 463,000	R 1,378	4.1%
7.1	Micro-finance loan guarantee fund	number	100	R 2,500	R 250,000					
7.2	Administration of loan finance	months	24	R 7,000	R 168,000					
7.3	Audit costs	number	3	R 15,000	R 45,000					
8	Site supervision & mentoring					R 290,000	3	R 870,000	R 2,589	7.7%
8.1	Engineering supervision	days	20	R 2,500	R 50,000					
8.2	Farming supervision	months	6	R 25,000	R 150,000					
8.3	Farming mentoring	months	6	R 15,000	R 90,000					
9	Project management	months	39	R 20,000	R 780,000	R 780,000	1	R 780,000	R 2,321	6.9%
10	Project administration	%	1	5.0%				R 537,036	R 1,598	4.8%
	Sub-Total Rands (ex-VAT)							R 11,277,746	R 33,565	100.0%
	VAT @ 14%							R 1,578,884	R 4,699	
	Total Rands							R 12,856,630	R 38,264	

- Total funds required are R12,856,630 in current prices and annual escalation to be added accordingly
- Budget estimate includes all costs related for the establishment of some 338 allotments; a Farmers Co-operative Support Centre; and, 1000 homestead gardens
- Budget estimate includes a 5% project administration fee for handling all the monetary transactions and VAT at 14%
- Investment per allotment / urban farmer is R38,300, which compares with the LRAD scheme whose entry level is R20,000 and has a maximum ceiling of R100,000
- Total beneficiaries will be 338 allotment farmers plus 1000 homestead growers, making a total of 1338 beneficiaries at or above the poverty level for an investment of R9,600 per informal job opportunity

PROJECT PROGRAMME

#	Task	Budget (R000s)	2005		2006				2007				2008			
			Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
A	Project work plan	R 67														
A.1	Development Concept Plan	R 13														
A.2	Business Plan	R 54														
A.3	Update Business Plan															
B	Phase 1 - 104 Allotments	R 2,650														
B.1	Site design & survey	R 202														
B.2	Training	R 827														
B.3	Site establishment	R 1,268														
B.4	Plant propagation	R 113														
B.5	Site supervision	R 150														
B.6	Mentoring	R 90														
C	Phase 2 - 126 Allotments	R 3,149														
C.1	Site design & survey	R 244														
C.2	Training	R 1,002														
C.3	Site establishment	R 1,526														
C.4	Plant propagation	R 137														
C.5	Site supervision	R 150														
C.6	Mentoring	R 90														
D	Phase 3 - 108 Allotments	R 2,740														
D.1	Site design & survey	R 209														
D.2	Training	R 859														
D.3	Site establishment	R 1,315														
D.4	Plant propagation	R 117														
D.5	Site supervision	R 150														
D.6	Mentoring	R 90														
E	Farmers Co-operative Support Centre	R 892														
E.1	Design	R 60														
E.2	Procurement	R 26														
E.3	Construction	R 616														
E.4	Agricultural infrastructure	R 100														
E.5	Site supervision	R 90														
F	Homestead gardens	R 463														
F.1	Secure loan guarantee fund															
F.2	Establish 1000 gardens	R 250														
F.3	Loans administration	R 213														
G	Project Management	R 780														
H	Project Administration	R 537														
	Sub-Total	R 11,278	R 187	R 592	R 1,793	R 375	R 110	R 746	R 2,324	R 896	R 659	R 714	R 2,006	R 535	R 171	R 171
	VAT	R 1,579	R 26	R 83	R 251	R 52	R 15	R 104	R 325	R 125	R 92	R 100	R 281	R 75	R 24	R 24
	Quarterly cash flow (R000s)	R 12,857	R 213	R 675	R 2,044	R 427	R 126	R 850	R 2,650	R 1,021	R 751	R 814	R 2,286	R 609	R 195	R 195
	Cumulative quarterly cash flow (R000s)		R 213	R 888	R 2,932	R 3,359	R 3,485	R 4,335	R 6,985	R 8,006	R 8,757	R 9,571	R 11,857	R 12,467	R 12,662	R 12,857

PROJECT PHASING & RESOURCING

#	Task	Legend	2005		2006				2007				2008			
			Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
A	Project work plan															
B	Phase 1 - 104 Allotments															
C	Phase 2 - 126 Allotments															
D	Phase 3 - 108 Allotments															
E	Farmers Co-operative Support Centre															
F	Homestead gardens - 1000															
Annual cash flow			R 888,100		R 3,446,823				R 5,236,029				R 3,285,677			
Cumulative cash flow			R 888,100		R 4,334,924				R 9,570,953				R 12,856,630			

WAY FORWARD

- **OPTIONS FOR IMPLEMENTATION**

- Holistic approach as per Development Concept Plan, but insufficient funds
- Incremental approach – use current funding but continue to lobby for funds
- May not be able to achieve economies of scale but acceptable due to lack of total funding
- Harness the labour resources and enthusiasm of trainees otherwise their stipend will be wasted

- **NEXT STEPS FOR THE INCREMENTAL APPROACH OF PHASE 1 – 104 ALLOTMENTS**

- Omit the Business Plan and proceed with site design and survey
- Plan and design the Phase 1 allotment area
- Resource plants and equipment
- Site layout
- Implement site infrastructure
- Establish crops and trees
- Provide dedicated site supervision
- Provide dedicated mentoring of farmers
- Provide dedicated project management

- **BUDGET RESOURCES REQUIRED FOR INCREMENTAL APPROACH ARE R3,475,771**

- **IMPLEMENTATION TIMESCALE IS ONE YEAR**

**DESIGN CONCEPT
FOR PART OF
PHASE 1
ALLOTMENTS**



BUDGET REQUIRED FOR PHASE 1

#	Task	Unit	Quantity	Rate	Sub-Totals	Bulk Unit Cost	Bulk Units	Total Cost	Cost / 104 farmers	%
2	Training Learnerships					R 128,000	6.5	R 832,000	R 8,000	27.3%
2.1	Basic Permaculture / organic farming course	trainees	16	R 1,600	R 25,600					
2.2	Basic rainwater harvesting course	trainees	16	R 1,600	R 25,600					
2.3	Animal Production Systems course	trainees	16	R 1,600	R 25,600					
2.4	Facilitators / organic inspectors course	trainees	2	R 1,600	R 3,200					
2.5	Trainee in-service maintenance payments	trainees	16	R 3,000	R 48,000					
4	Planning & design					R 31,200	6.5	R 202,800	R 1,950	6.7%
4.1	Soil test pits	hours	16	R 1,000	R 16,000					
4.2	Detailed design	hours	24	R 500	R 12,000					
4.3	Site survey	hours	8	R 400	R 3,200					
5	Site Infrastructure					R 188,550	6.5	R 1,225,575	R 11,784	40.2%
5.1	Swales complete	m	640	R 30	R 19,200					
5.2	Percolation dam	m3	320	R 40	R 12,800					
5.3	Sub-surface dam & drain	m	95	R 10	R 950					
5.4	Hardened pathways	m	520	R 10	R 5,200					
5.5	Soil improvements	m2	5,120	R 10	R 51,200					
5.6	10ML Water tank	No.	1	R 10,000	R 10,000					
5.7	Water wheel & pump complete	No.	1	R 40,000	R 20,000					
5.8	Irrigation pipes complete	m	460	R 50	R 23,000					
5.9	Check weir in river bed (car tyres)	No.	1	R 15,000	R 15,000					
5.10	Small tools	trainees	16	R 500	R 8,000					
5.11	Fencing	m	290	R 80	R 23,200					
6	Plant Material					R 17,440	6.5	R 113,360	R 1,090	3.7%
6.1	Seedlings & small tools	trainees	16	R 1,000	R 16,000					
6.2	Fruit trees	number	32	R 20	R 640					
6.3	Pecan nut trees	number	20	R 40	R 800					
8	Site supervision & mentoring					R 290,000	1.0	R 290,000	R 2,788	9.5%
8.1	Engineering supervision	days	20	R 2,500	R 50,000					
8.2	Farming supervision	months	6	R 25,000	R 150,000					
8.3	Farming mentoring	months	6	R 15,000	R 90,000					
9	Project management	months	12	R 20,000	R 240,000	R 240,000	1.0	R 240,000	R 2,308	7.9%
10	Project administration	%	1	5.0%				R 145,187	R 1,396	4.8%
		Sub-Total Rands (ex-VAT)						R 3,048,922	R 21,317	72.7%
				VAT @ 14%				R 426,849	R 2,984	
				Total Rands				R 3,475,771	R 24,301	

Funding Commitments

Funding for Training Learnerships has already been secured

PROGRAMME FOR PHASE 1

#	Task	Budget	Q3 - 2005	Q4-2005	Q1 - 2006	Q2 - 2006	Q3 - 2006	Q4 - 2006
B	Phase 1 - 104 Allotments	R 2,663,735						
B.1	Site design & survey	R 202,800						
B.2	Training	R 832,000						
B.3	Site establishment	R 1,225,575						
B.4	Plant propagation	R 113,360						
B.5	Site supervision	R 200,000						
B.6	Mentoring	R 90,000						
G	Project Management	R 240,000						
H	Project Administration	R 145,187						
	Sub-Total	R 3,048,922	R 174,720	R 475,020	R 1,776,448	R 402,234	R 110,250	R 110,250
	VAT	R 426,849	R 24,461	R 66,503	R 248,703	R 56,313	R 15,435	R 15,435
	Quarterly cash flow	R 3,475,771	R 199,181	R 541,523	R 2,025,150	R 458,547	R 125,685	R 125,685
	Cumulative quarterly cash flow		R 199,181	R 740,704	R 2,765,854	R 3,224,401	R 3,350,086	R 3,475,771