

# Henkries Mega-Agripark Development



31 July 2015

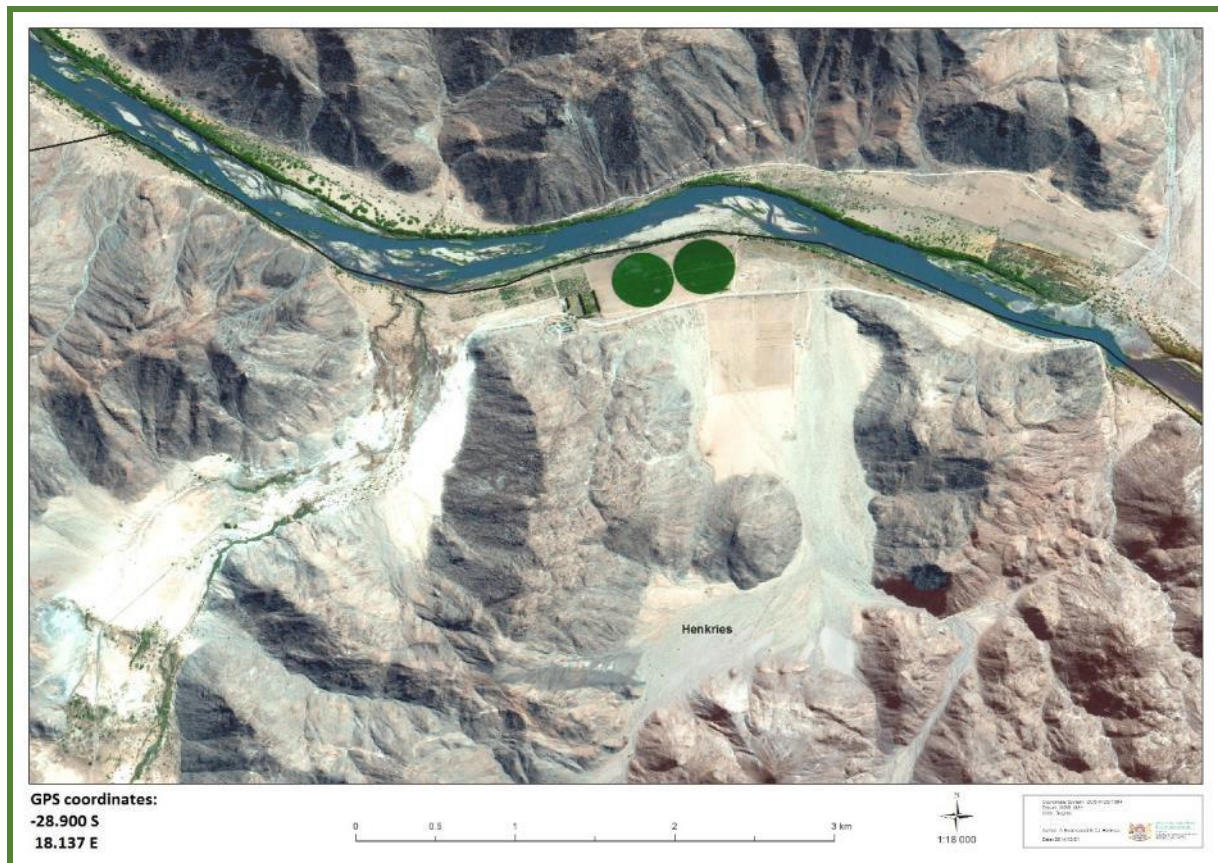
## **1. Abstract**

Namakwa district is one of very few areas in South Africa where high quality arable land together with water licenses from the Orange River are readily available for the economic development of local communities. Agricultural development has the potential to unlock the economy of this region through irrigated farming with high value crops. The primary objective of the proposed agricultural development is to stimulate the economy of this region through the development of a Mega Agri-park in order to ensure sustainable economic growth, job creation and economic empowerment of this community.

The scope of this project will be to develop approximately 130ha of high potential arable land in Henkries. This development is designed to act as catalyst for the development of a further 3000ha of arable land which is located in eleven distinct areas of the District. The basket of products to be produced varies from cash crops such as lucerne and grains, but the bulk of the development is aimed at high value crops with export potential in order to secure significant growth on the required investment. These products will be marketed through a central distribution center and processing facility earmarked to be developed in the Springbok Industrial Zone.

## **2. Introduction**

Namakwaland is an arid to semi-arid area situated in the northwest corner of South Africa, bordering on the Atlantic and Namibia. The Namakwa District Municipality is bordered by the Orange River to the North. Large areas of arable soil can be found on the banks of this river and the proximity to irrigation water creates attractive opportunities for development of intensive agricultural development. These potential development at Henkries forms part of the Orange River Emerging Farmer Settlement and Development Program which centers on economic growth, the development of rural communities and economic empowerment through the development of irrigation land into intensive agricultural production units.



## Background

Henkries Farm is situated along the bank of the Orange River and lies 110km north of Springbok ( $28^{\circ} 54'S$ ;  $18^{\circ} 07'E$ ). Henkries Farm is well known for its date production. Over and above the approximately 60ha of dates for commercial markets, cash crops and vegetables are produced under pivot irrigation on approximately 25 ha. Soil samples for further investigations for the development of dates and dry grapes (raisins) have been conducted and await analysis.

The primary objective of the existing agricultural development project at Henkries Farm centers on economic growth, job creation and economic empowerment, through the production of dates, dry grapes (raisins) and mango's under irrigation.

The scope of the project is to upgrade the packaging facilities & housing complexes, ESKOM electricity system, current irrigation infrastructure, mechanization and to expand the production of dates and dry grapes (raisins) under irrigation. The Department of Agriculture, Land Reform and Rural Development took over management of Henkries Farm from CASIDRA on 1 June 2008. Henkries farm worker component currently consists out of 14 permanent workers and 8 seasonal workers through the year and appoints another extra 20 worker during the harvesting of dates and mango harvesting period. Hand labour is currently used to execute all work related activities on the farm. The Henkries Farm labourers/workers

descended from Steinkopf, Goodhouse and unemployed people of the other surrounding areas.

### **3. Strategic considerations**

The Henkries Irrigation Development is aligned to several strategic policies and imperatives:

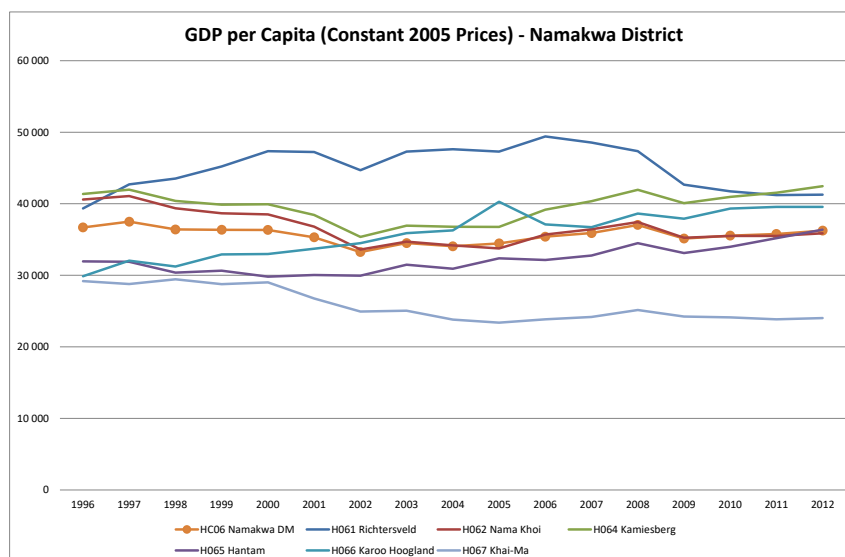
- The New Growth Path (NGP) identified agriculture and its value chain as a catalyst for radical socio-economic transformation and focus on job creation and decent work towards the year 2020.
- The vision of the National Development Plan (NDP) is to create close to 1 million jobs in Agriculture and to reduce unemployment through:
  - Expanded irrigated agriculture (by at least 500 000ha).
  - Revitalization of underutilized land in communal areas.
  - Pick and support commercial sectors with highest potential for growth.
  - To support job creation in the upstream and downstream industries.
  - To find creative combinations between opportunities.
- The Agricultural Policy Action Plan (APAP) is aligned to the NGP, NDP and the MTSF 2014 -2019 action plan.
- The National Infrastructure Plan highlight 18 strategically integrated projects (SIPs) to fast track development and growth.
- SIP 11 deals specifically with agricultural and rural infrastructure to support the expansion of production and employment.
- Mega AgriPark Initiative of Department of Rural Development
- The River Valley Catalytic Project has also been identified as a framework to develop irrigation schemes through infrastructure, improved market access, social infrastructure and skills development.

### **4. Importance of agriculture in Namakwa District**

According to the 2002 agricultural census (the last census data on District level) Namakwa contributed 7.3% to total Gross Farm Income of the Northern Cape. The importance of production under irrigation is relatively small if compared to the rest of the Province as the District produced 2.2% of the value of field crops and 2.4 % of the value of horticulture crops in the Northern Cape.

According to Global Insight calculations, Namakwa District was the only District that indicated a decrease in GDP per Capita for the period 1996 to 2012, dropping from R 36,692 to R 36,247 in constant 2005 prices (see Figure 1). This means that output per capita decreased marginally over this period.

Figure 1.



The situation for Nama Khoi and Khai-Ma Municipalities is even worse as the GDP per Capita decreased from R 40,593 to R35,871 and from R29,187 to R24,020 for the same period. Richtersveld Municipality experienced a marginal increase from R39,350 to R41,279. This highlights the need for additional development in these areas to reverse this trend.

The Gross Value that was added by the agricultural sector as a percentage of the total value that was added in the Northern Cape in 2012 totalled 6.34%. The contribution of the value added by agriculture in Namakwa District (R 768 million) accounted for 10.41% of the total value added by the District.

In Nama Khoi- and Richtersveld Municipal areas agriculture employed 10% of total formal sector employment (4<sup>th</sup> highest contributing sector), but in Khai-Ma Municipal area agriculture employed 45% of total formal sector employment and is the highest contributing sector. It clearly underlines the role of agriculture as job creator in rural areas.

While there are moderate backward linkages with sectors such as manufacturing (e.g. fertilizers and chemicals), transport and services, minimum forward linkages exists with virtually no processing of agricultural products or agro-tourism ventures.

The potential for agro-tourism, agro-processing and value adding initiatives presents further opportunities for diversification of the local economy. It is recognized that successful promotion of agro-processing can impact positively on the incomes of primary producers, create employment and address market risks. It is also one of the means by which transformation of agriculture in the province can be achieved. Possible agro-processing ventures in the area include:

- Date production
- Dried fruit and vegetables
- Animal feed products



- Cereals

## **5. Biophysical environment**

The area lies in a semi-arid region and fresh water is a scarce resource in the district. It has implications for the types of agricultural activities that can take place, in that the most appropriate crops and the most water-efficient irrigation technologies need to be promoted. The only sustainable source of good quality irrigation water is the Orange River. In terms of biodiversity the area is rich in natural flora which can be harnessed as a unique tourism attraction. The area has a further competitive advantage with its hot and sunny climate with the highest solar radiation intensity in South Africa, making it appropriate for private and large-scale solar energy generation.

## **6. Location and Land use**

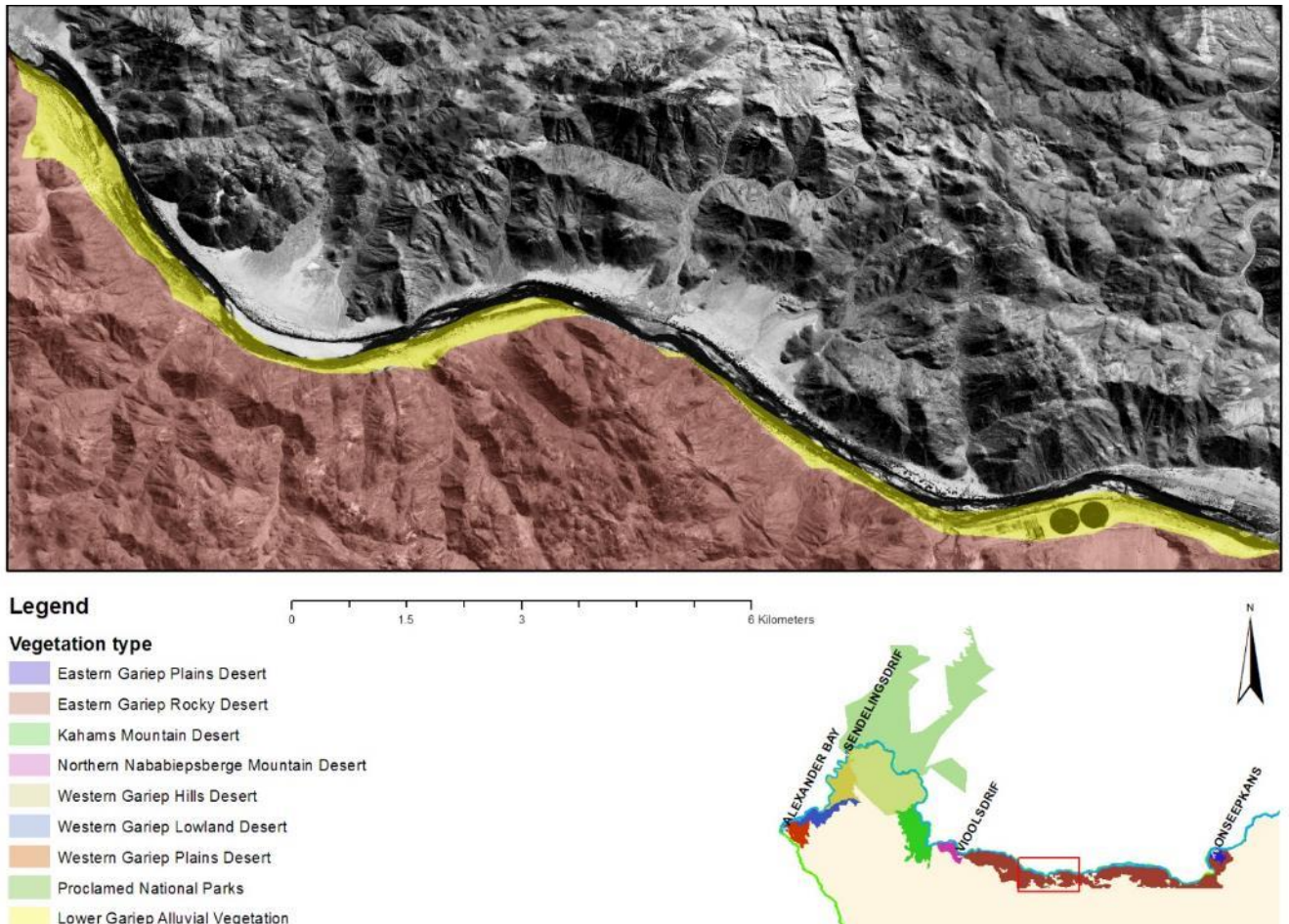
Henkries lies approximately 90km north of Springbok in the Namakwa Magisterial District which is located in the North-western corner of South Africa's Northern Cape Province bordering Namibia (Figure 1) and covers an area of around 126 000 km<sup>2</sup>. The Namakwa District is the largest and least populous district in South Africa (Bourne *et al.*, 2012). The majority of the District fall under private land tenure, with a smaller proportion under communal land use and around 3.5% of the land area are under formal conservation and 2.7% under mining permits (Todd *et al.* 2009).

The districts major land use is defined by livestock grazing and mining. Approximately 90% of the district's land surface is natural rangelands used for livestock grazing and the remaining 10% is a combination of mining, urban development, protected areas and crop agriculture (Todd *et al.* 2009; Bourne *et al.*, 2012).

## **7. Climate**

## **8. Vegetation and Geology**

Of all the biomes found in South Africa the Desert Biome has the lowest amount of rainfall and also the highest variability in the mean annual precipitation (MAP) (Jürgens, 2006; Low & Rebelo, 1996).



**Figure 2:** In the lower right corner cultivated lands under irrigation within the Lower Gariep Alluvial vegetation type (Mucina *et al.*, 2006) is clearly visible together with the surrounding mountainous rocky areas of the Eastern Gariep Rocky Desert (Mucina *et al.*, 2006) which is less suitable for cultivation purposes. The area shown here are located between the towns Onseepkans and Vioolsdrif (grey mountainous area north of the River is Namibia).

The Eastern Gariep Plains Desert vegetation type covers parts of the Northern Cape Province of South Africa east of the Richtersveld, and south towards the Orange River at Henkries, Klein Pella and the vicinity of Onseepkans. The sloping sheet wash plains of the Eastern Gariep Plains Desert vegetation type are often in sharp contrast with the surrounding rocky hills (Jürgens, 2006). This vegetation type is mostly found at altitudes from between 250 m and 900 m above sea level. Grasslands (mainly perennial *Stipagrostis* species and the annual *Schmidtia kalahariensis*) dominate the vegetation layer on much of the plains with additional shrubs (such as *Zygophyllum microcarpum*, *Euphorbia gregaria*, *Parkinsonia africana* and *Psilocaulon subnodosum*) and herbs such (*Codon royenii*, *Mesembryanthemum guerichianum* and, *Rogeria longiflora*) as in the drainage lines or more gravelly or loamy soils close by the mountainous areas (Jürgens, 2006).

## **9. Agricultural potential**

Due to the dominant soil properties, inter alia, (i) topsoil horizons (ii) clay content (iii) effective root depth (iv) dominant soil form and series, it can be concluded that the soils of Henkries on the proposed area for irrigation have low to high potential for irrigated agriculture according to the criteria of Schoeman (2004). The area cannot be considered as prime land, because prime land is defined as the best land available, primarily from national perspective. However, this area can be defined as unique agricultural land, due to specific combinations of location, climate or soil properties that make it highly suitable for a specific crop, more especially dates and grapes.

The impact on the production of annual summer and winter grain crops and pastures are probably small on a local scale. This assumption is based on the fact that raw input materials need to be transported into the area over long distances while the raw products will have to be transported back again to far-off markets. The opportunity for value adding is relatively small. There is also no evidence of success on large lands that have been planted to summer as well as winter annual crops and pastures in the near past.

Fodder crops such as lucerne has proved to be very successful in this area and especially so as a cash crop which ensures a fairly stable income throughout the year. Lucerne produced in this area is highly suitable for milk producers as fodder and in current market conditions it is probably the most lucrative cash crop in the area.

### **Stakeholders**

Stakeholders in this project include:

- Department of Agriculture, Land Reform and Rural Development
- Nama Khoi Municipality
- Department Public Work
- Eskom
- DWAF
- Namakwa District Municipality (NDM)

### **Project status**

Currently only a small portion of the date plantations produce quality fruit and are commercially viable. Infrastructures, including the packing and cooling facilities, are in a poor condition and need to be replaced and or renovated.

### **Proposed development**

The scope of the project is to successfully develop 120 ha of long-term products.

- 90 ha dry grapes
- 30 ha dates



Detailed activity schedules, timeframes and cost estimates are listed in attached Annexure 1.

## Cost of Development

**Table 1.** Cost of Bulk Water Development

Category	Activity	Total Cost	Total	2015/16	2016/17	2017/18	2018/19
Bulk water supply	Pump station	R 6,000,000	R 6,000,000		R 6,000,000		
	Main pipeline	R 3,000,000	R 3,000,000		R 3,000,000		
	Storage dam	R 2,000,000	R 2,000,000		R 2,000,000		
	Eskom connection	R 1,000,000	R 1,000,000		R 1,000,000		
	Flood diversion walls	R 1,000,000	R 1,000,000		R 1,000,000		
Bulk infrastructure	EIA / ROD	R 1,000,000	R 1,000,000		R 1,000,000		
	Roads	R 1,000,000	R 1,000,000			R 1,000,000	
	Stores and buildings	R 4,000,000	R 4,000,000			R 4,000,000	
	Accommodation	R 5,000,000	R 5,000,000				R 5,000,000
	Fencing	R 1,000,000	R 1,000,000			R 1,000,000	
	Surface drainage	R 2,000,000	R 2,000,000			R 2,000,000	
	Electricity distribution	R 1,000,000	R 1,000,000				R 1,000,000
			R 0				
<b>Total</b>		<b>R 28,000,000</b>	<b>R 28,000,000</b>	<b>R 0</b>	<b>R 14,000,000</b>	<b>R 8,000,000</b>	<b>R 6,000,000</b>

**Table 2.** Cost of on land development

Category	Activity	Cost/Unit	Total Cost	Total
Water redistribution	Secondary pump stations		R 1,000,000	R 1,000,000
	Main distribution pipelines		R 2,000,000	R 2,000,000
	Additional storage/distribution dams		R 0	R 0
Soil preparation	Rip of land 120 ha	R 30,000	R 3,600,000	R 3,600,000
On-land irrigation	Drip/Micro irrigation system 120 ha	R 35,000	R 4,200,000	R 4,200,000
Trellis system	Dry grapes 90 ha	R 100,000	R 9,000,000	R 9,000,000
Production inputs	Plant material 90 ha vines, 30 ha dates		R 7,200,000	R 7,200,000
	Seeds, fertilizers & chemicals		R 600,000	R 600,000
Mechanization	Tractors	R 30,000	R 3,600,000	R 3,600,000
	Implements & equipment	R 25,000	R 3,000,000	R 3,000,000
Transport	LDV, truck, bus		R 2,000,000	R 2,000,000
Infrastructure	Cold storage / Packaging facility		R 10,000,000	R 10,000,000
	Drying facility	R 40,000	R 3,600,000	R 3,600,000
				R 0
<b>Total</b>			<b>R 49,800,000</b>	<b>R 49,800,000</b>

**Table 3.** Timeframe of cost to on-land development

Activity	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21
Secondary pump stations					R 1,000,000		

Main distribution pipelines					R 2,000,000		
Additional storage/distribution dams							
Rip of land 120 ha			R 900,000		R 2,700,000		
Drip/Micro irrigation system 120 ha			R 1,100,000		R 3,100,000		
Dry grapes 90 ha					R 9,000,000		
Plant material 90 ha vines, 30 ha dates		R 600,000	R 3,000,000		R 3,600,000		
Seeds, fertilizers & chemicals			R 150,000		R 450,000		
Tractors	R 574,000			R 3,026,000			
Implements & equipment		R 1,000,000		R 2,000,000			
LDV, truck, bus		R 380,000		R 1,620,000			
Cold storage / Packaging facility							R 10,000,000
Drying facility						R 3,600,000	
	R 574,000	R 1,980,000	R 5,150,000	R 6,646,000	#####	R 3,600,000	R 10,000,000

**Table 4.** Timeframe of activities

Category	Activity	Duration	Start	Finish
Bulk water supply	Water users license	365 days	Apr-15	Mar-16
	Eskom connection	Completed		
	Survey, design and documentation	365 days	Apr-15	Mar-16
	Construction	365 days	Apr-16	Mar-17
Bulk infrastructure	Plough certificate / EIA / ROD	365 days	Apr-14	Mar-15
	Roads	90 days	Apr-17	Jun-17
	Stores and buildings	90 days	Jul-17	Sep-17
	Accommodation	120 days	Jun-18	Sep-18
	Fencing	90 days	Apr-17	Jun-17
	Electricity distribution	90 days	Apr-18	Jun-18

**Table 5.** Timeframe of activities

Category	Activity	Duration	Start	Finish
Development of land use plan	Identification of irrigation land	Completed		
	Stakeholder engagement	365 days	Apr-15	Mar-16
	Mapping & classification of soils	Completed		
	Soil analysis	Completed		
	Climate & crop suitability	Completed		
	Geology & topography	Completed		

Economic studies	Desktop costing model	Completed		
	Economic feasibility study	Completed		
	Stakeholder approval of development model	90 days	Apr-15	Jun-15
	Business case	90 days	Apr-15	Jun-15
Development of business model	Identification of beneficiaries	90 days	Apr-16	Jun-16
	Identification of developers	N/A		
	Identification of mentors	N/A		
	Evaluation of business proposals	60 days	Oct-16	Nov-16
	Formalization of business structure	60 days	Jan-17	Feb-17
	Funding strategy	180 days	Apr-16	Sep-16
Irrigation infrastructure development	Design bulk water redistribution	90 days	Jan-18	Mar-18
	Design on-land irrigation systems	90 days	Jan-18	Mar-18
	Surface & sub-surface drainage designs	90 days	Jan-18	Mar-18
	Construction of irrigation systems	60 days	Apr-18	May-18
Establishment of crops	Soil preparation	120 days	Feb-18	May-18
	Pegging out roads and irrigation blocks	60 days	Mar-18	Apr-18
	Procurement plant material (Phases)			
	Trellising material	120 days	Apr-18	Jul-18
	Establishment of dry grapes	30 days	Aug-18	Aug-18
	Establishment of dates	30 days	Aug-16	Aug-16
	Procurement of production inputs (Ongoing)			
Mechanization	Drafting of mechanization plan	90 days	Apr-16	Jun-16
	Procurement of transport	30 days	Apr-17	Apr-17
	Procurement of tractors	30 days	Apr-17	Apr-17
	Procurement of implements & equipment	30 days	Apr-17	Apr-17
Infrastructure	Cold storage / Packing facility	180 days	May-20	Oct-20
	Drying facility	90 days	Jul-19	Sep-19
M & E	Compilation of M & E plan	90 days	Apr-16	Jun-16

## Project Feasibility and Viability

Infrastructure development and mechanization is correlated to the irrigation development and expansion and is distributed over a 5-year period, with the bulk water supply development ending Year 1, the on-land development of the current date production in Year 1 and other infrastructure and development of dried grapes in Years 3-5. The project requires an investment of R77.2 million over a 5-year period (see Annexure 1 for detail activity schedule and costing of development phases).

It was assumed that 95% of this infrastructure development will be funded through grant funding and/or own funding as needed and 5% from operational funds from farming activities of the project to evaluate influence on cash flow. Farming operations is also responsible for

paying production inputs. Overhead cost was estimated R15,000/ha for dates production and R10,000/ha for dried grape production which brings the weighted overhead cost for the entire project to R11,300/ha.

Annexure 1 indicates the calculations and cash flow for the first 15 years of budgeted operations. As already indicated, it is assumed that grant and own funding will be available to cover almost 95% of the development cost as specified above in the year of the cost.

As it is assumed that 95% of the capital outlay will be funded by grants and/or own capital, the project is responsible for production- and overhead cost and the remainder of the capital outlay. The cash flow indicates a peak shortage of –R21.222 million by the end of Year 5 with operating surpluses from Year 6. As the operating surpluses increase from Year 7 onwards as production of dried grapes and dates increase, the cash flow situation improves and turns positive by the end of Year 10.

As already indicated the cumulative cash flow reaches a break-even point in Year 10 when it turns positive and it is estimated that the total net cash generated over the 30-year period for this scenario will amount to almost R128.4 million. The total income generated over this period (value of total production) amounts to more than R468 million and indicates the value that this production will add to the economy of the region.

Year 11-15 sees the introduction of depreciation of R1.9 million per annum as maintenance and replacement cost for infrastructure that need to be covered by the farming operations. The rate of replacement is increased from Year 16 onwards to R3.9 million per annum, explaining the additional decrease in the rate of net cash flow increase. From Year 16 the entire project produces a net farm income of R6.025 per annum.

To measure risk, two additional cash flow scenarios were added see Annexure 1. The first scenario introduced is when product prices are reduced with 10% each year. This cash flow indicated that the maximum cumulative shortage by Year 6 amounts to –R24.453 million and the break-even point is only reached by Year 14. Under this reduced price situation the development pace should be slowed down and/or a higher grant/own funding contribution should be introduced, probably 100%.

The second scenario introduced is when product yield are reduced with 10% each year. This cash flow indicated that the maximum cumulative shortage by Year 5 amounts to –R23.933 million and the break-even point is only reached by Year 13. Under this reduced yield situation the development pace should be slowed down and/or a higher grant/own funding contribution should be introduced, probably 100%.

It is estimated that the project has the ability to create 48 full time jobs and that the total permanent equivalent jobs will be equal to 132 full time jobs.

To measure the later income stream generated by the project against the initial investment in development cost of the project (grant funding, land, current infrastructure and value of water included), the Net Benefit/Investment (NB/I) Ratio was calculated by discounting all investments and benefits (net income generated) to Year 1 and comparing them as a ratio. The NB/I Ratio for the project is indicated in Annexure 1.

For the budgeted scenario a NB/I Ratio of 4.39 is calculated, indicating that the discounted value of downstream (future) net income from the project over the 30-year period equals R4.39 for every R1.00 discounted investment (development cost).

With the reduced price and yield scenarios the future net cash flow is lower and returns a lower ratio. The calculated NB/I Ratio for the two scenarios are lower (R1.79 and R2.34 respectively), but will increase if grant/own funding is increased and/or pace of development is slower.

## 10. Conclusions

The arable soils at Henkries together with the climate, were found to provide an excellent opportunity for irrigation development with high value crops such as grapes and dates. The proposed development has the ability to contribute significantly to economic development and job creation in the area. Activity schedules, costing and potential income confirm the project to be viable and sustainable. Funding should be sourced to continue with development.

## 11. References

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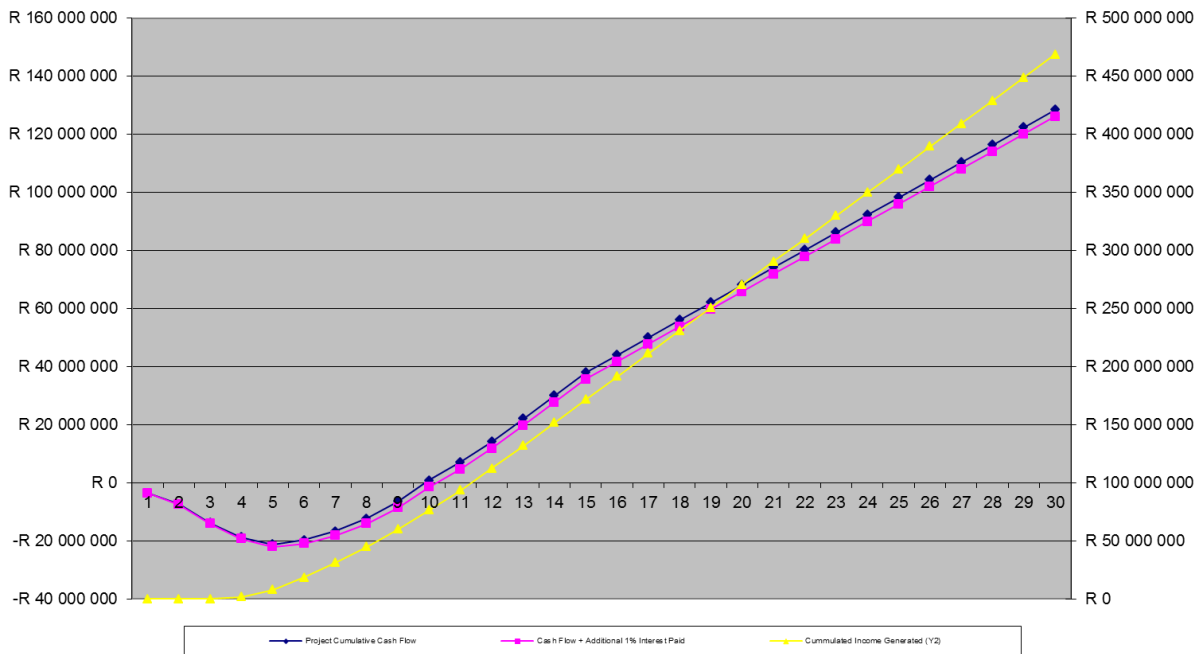
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SCENARIO ACCORDING TO PROPOSED BUDGETS									
	Year	1	2	3	4	5	6	7	
Total Infrastructure		R 19 550 000	R 16 600 000	R 27 450 000	R 3 600 000	R 10 000 000	R 0	R 0	
Size Related Infrastructure Cash Crops		R 0	R 0	R 0	R 0	R 0	R 0	R 0	
Size Related Infrastructure Dried Grapes	R 205 000								
Size Related Infrastructure Dates	R 185 000								
Size Related Infrastructure Table Grapes	R 205 000								
Grant		R 18 600 000	R 15 800 000	R 26 100 000	R 3 400 000	R 9 500 000	R 0	R 0	
Loan		R 0							
Interest Rate	12.50%								
Loan Repayment New Loan		R 0							
Loan Repayment Existing Loan		R 0							
Cash Crops (Total ha in Each Year)									
Lucern									
Cotton									
Groundnuts									
Maize									
Wheat/Barley									
Cash Flow Cash Crops		R 0	R 0	R 0	R 0	R 0	R 0	R 0	R 0
Cash Flow Dried Grapes (Existing)	0	R 0	R 0	R 0	R 0	R 0	R 0	R 0	R 0
Cash Flow Dates (Existing)	0	R 0	R 0	R 0	R 0	R 0	R 0	R 0	R 0
Cash Flow Table Grapes (Existing)	0	R 0	R 0	R 0	R 0	R 0	R 0	R 0	R 0
Planting Schedule Dried Grapes									
	1	R 0	R 0	R 0	R 0	R 0	R 0	R 0	R 0
	2		R 0	R 0	R 0	R 0	R 0	R 0	R 0
	3	90		-R 1 107 000	-R 49 500	R 3 055 500	R 5 130 000	R 5 130 000	
	4				R 0	R 0	R 0	R 0	
	5					R 0	R 0	R 0	
	6						R 0	R 0	
	7							R 0	
	8								
	9								
	10								
Cash Flow Dried Grapes	90	R 0	R 0	-R 1 107 000	-R 49 500	R 3 055 500	R 5 130 000	R 5 130 000	
Planting Schedule Dates									
	1	30	-R 1 749 000	-R 1 749 000	-R 1 749 000	-R 1 749 000	-R 429 000	R 891 000	
	2			R 0	R 0	R 0	R 0	R 0	
	3				R 0	R 0	R 0	R 0	
	4					R 0	R 0	R 0	
	5						R 0	R 0	
	6							R 0	
	7								R 0
	8								
	9								
	10								
Cash Flow Dates	30	-R 1 749 000	-R 1 749 000	-R 1 749 000	-R 1 749 000	-R 1 749 000	-R 429 000	R 891 000	
Planting Schedule Table Grapes									
	1		R 0	R 0	R 0	R 0	R 0	R 0	
	2			R 0	R 0	R 0	R 0	R 0	
	3				R 0	R 0	R 0	R 0	
	4					R 0	R 0	R 0	
	5						R 0	R 0	
	6							R 0	
	7								R 0
	8								
	9								
	10								
Cash Flow Table Grapes	0	R 0	R 0	R 0	R 0	R 0	R 0	R 0	R 0
Overhead Costs	R 11 300	R 406 800	R 542 400	R 678 000	R 813 600	R 949 200	R 1 017 000	R 1 084 800	
Cash Flow per Annum		-R 3 105 800	-R 3 091 400	-R 4 884 000	-R 2 812 100	-R 142 700	R 3 684 000	R 4 936 200	
Cumulative Cash before Interest		-R 3 105 800	-R 6 585 425	-R 12 292 603	-R 16 641 279	-R 18 864 138	-R 17 538 156	-R 14 794 225	
Interest		-R 388 225	-R 823 178	-R 1 536 575	-R 2 080 160	-R 2 358 017	-R 2 192 269	-R 1 849 278	
Project Cumulative Cash Flow		-R 3 494 025	-R 7 408 603	-R 13 829 179	-R 18 721 438	-R 21 222 156	-R 19 730 425	-R 16 643 503	
Cumulative Cash before Interest		-R 3 105 800	-R 6 616 483	-R 12 410 249	-R 16 928 759	-R 19 399 163	-R 18 382 548	-R 15 973 948	
Interest (Plus Additional 1%)		-R 419 283	-R 909 766	-R 1 706 409	-R 2 327 704	-R 2 667 385	-R 2 527 600	-R 2 196 418	
Cash Flow + Additional 1% Interest Paid		-R 3 525 083	-R 7 526 249	-R 14 116 659	-R 19 256 463	-R 22 066 548	-R 20 910 148	-R 18 170 366	
Project Income Generated		R 0	R 0	R 0	R 1 687 500	R 6 187 500	R 10 800 000	R 12 600 000	
Cummulated Income Generated (Y2)		R 0	R 0	R 0	R 1 687 500	R 7 875 000	R 18 675 000	R 31 275 000	
INFRASTRUCTURE BREAKDOWN:		AMOUNT							
Bulk water supply		R 13 000 000							
Bulk infrastructure		R 1 000 000	R 8 000 000	R 6 000 000					
Bulk water re-distribution				R 3 000 000					
Mechanization			R 8 600 000						
Cold storage & packing facility						R 10 000 000			
Drying facilities					R 3 600 000				
Size Related Infrastructure Cash Crops		R 0	R 0	R 0	R 0	R 0	R 0	R 0	
Size Related Infrastructure Dried Grapes		R 0	R 0	R 18 450 000	R 0	R 0	R 0	R 0	
Size Related Infrastructure Dates		R 5 550 000	R 0	R 0	R 0	R 0	R 0	R 0	
Size Related Infrastructure Table Grapes		R 0	R 0	R 0	R 0	R 0	R 0	R 0	
TOTAL		R 19 550 000	R 16 600 000	R 27 450 000	R 3 600 000	R 10 000 000	R 0	R 0	
TOTAL INFRASTRUCTURE	100.0%	R 77 200 000							
TOTAL GRANTS / CASH INVESTMENT	95.1%	R 73 400 000							
Cost of Production Inputs		R 2 155 800	R 2 291 400	R 3 534 000	R 4 299 600	R 5 830 200	R 7 116 000	R 7 663 800	
Permanent Job Opportunities		30	30	48	48	48	48	48	
Total Permanent Equivalent Jobs		60	60	132	132	132	132	132	
Dividends Available Cumulative		0	0	0	0	0	0	0	
Dividends Paid per Annum (Budgeted)		0	0	0	0	0	0	0	

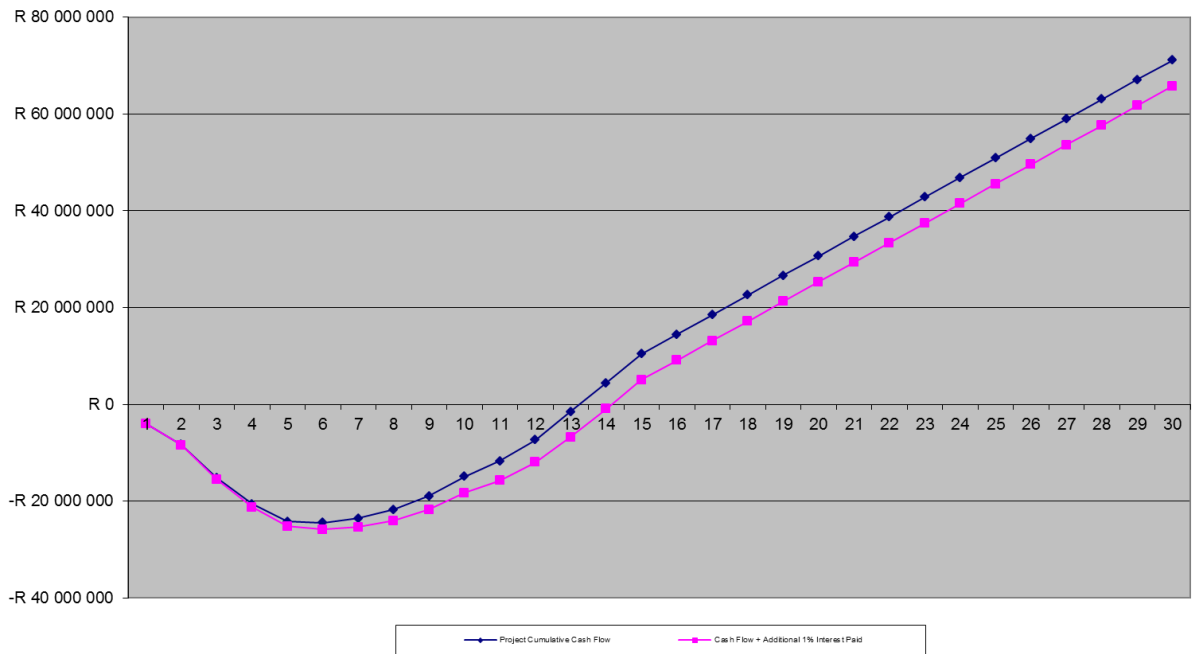
SCENARIO ACCORDING TO PROPOSED BUDGETS									
	8	9	10	11	12	13	14	15	
Total Infrastructure	R 0	R 0	R 0	R 1 930 000	R 1 930 000	R 1 930 000	R 1 930 000	R 1 930 000	
Size Related Infrastructure Cash Crops	R 0	R 0	R 0						
Size Related Infrastructure Dried Grapes									
Size Related Infrastructure Dates									
Size Related Infrastructure Table Grapes									
Grant	R 0	R 0	R 0						
Loan									
Interest Rate									
Loan Repayment New Loan									
Loan Repayment Existing Loan									
Cash Crops (Total ha in Each Year)									
Lucern									
Cotton									
Groundnuts									
Maize									
Wheat/Barley									
Cash Flow Cash Crops	R 0	R 0	R 0	R 0	R 0	R 0	R 0	R 0	R 0
Cash Flow Dried Grapes (Existing)	R 0	R 0	R 0	R 0	R 0	R 0	R 0	R 0	R 0
Cash Flow Dates (Existing)	R 0	R 0	R 0	R 0	R 0	R 0	R 0	R 0	R 0
Cash Flow Table Grapes (Existing)	R 0	R 0	R 0	R 0	R 0	R 0	R 0	R 0	R 0
Planting Schedule Dried Grapes									
1	R 0	R 0	R 0	R 0	R 0	R 0	R 0	R 0	R 0
2	R 0	R 0	R 0	R 0	R 0	R 0	R 0	R 0	R 0
3	R 5 130 000	R 5 130 000	R 5 130 000	R 5 130 000	R 5 130 000	R 5 130 000	R 5 130 000	R 5 130 000	R 5 130 000
4	R 0	R 0	R 0	R 0	R 0	R 0	R 0	R 0	R 0
5	R 0	R 0	R 0	R 0	R 0	R 0	R 0	R 0	R 0
6	R 0	R 0	R 0	R 0	R 0	R 0	R 0	R 0	R 0
7	R 0	R 0	R 0	R 0	R 0	R 0	R 0	R 0	R 0
8	R 0	R 0	R 0	R 0	R 0	R 0	R 0	R 0	R 0
9		R 0	R 0	R 0	R 0	R 0	R 0	R 0	R 0
10			R 0	R 0	R 0	R 0	R 0	R 0	R 0
Cash Flow Dried Grapes	R 5 130 000	R 5 130 000	R 5 130 000	R 5 130 000	R 5 130 000	R 5 130 000	R 5 130 000	R 5 130 000	R 5 130 000
Planting Schedule Dates									
1	R 1 761 000	R 2 631 000	R 3 501 000	R 4 371 000	R 5 241 000	R 6 111 000	R 6 111 000	R 6 111 000	R 6 111 000
2	R 0	R 0	R 0	R 0	R 0	R 0	R 0	R 0	R 0
3	R 0	R 0	R 0	R 0	R 0	R 0	R 0	R 0	R 0
4	R 0	R 0	R 0	R 0	R 0	R 0	R 0	R 0	R 0
5	R 0	R 0	R 0	R 0	R 0	R 0	R 0	R 0	R 0
6	R 0	R 0	R 0	R 0	R 0	R 0	R 0	R 0	R 0
7	R 0	R 0	R 0	R 0	R 0	R 0	R 0	R 0	R 0
8	R 0	R 0	R 0	R 0	R 0	R 0	R 0	R 0	R 0
9		R 0	R 0	R 0	R 0	R 0	R 0	R 0	R 0
10			R 0	R 0	R 0	R 0	R 0	R 0	R 0
Cash Flow Dates	R 1 761 000	R 2 631 000	R 3 501 000	R 4 371 000	R 5 241 000	R 6 111 000	R 6 111 000	R 6 111 000	R 6 111 000
Planting Schedule Table Grapes									
1	R 0	R 0	R 0	R 0	R 0	R 0	R 0	R 0	R 0
2	R 0	R 0	R 0	R 0	R 0	R 0	R 0	R 0	R 0
3	R 0	R 0	R 0	R 0	R 0	R 0	R 0	R 0	R 0
4	R 0	R 0	R 0	R 0	R 0	R 0	R 0	R 0	R 0
5	R 0	R 0	R 0	R 0	R 0	R 0	R 0	R 0	R 0
6	R 0	R 0	R 0	R 0	R 0	R 0	R 0	R 0	R 0
7	R 0	R 0	R 0	R 0	R 0	R 0	R 0	R 0	R 0
8	R 0	R 0	R 0	R 0	R 0	R 0	R 0	R 0	R 0
9		R 0	R 0	R 0	R 0	R 0	R 0	R 0	R 0
10			R 0	R 0	R 0	R 0	R 0	R 0	R 0
Cash Flow Table Grapes	R 0	R 0	R 0	R 0	R 0	R 0	R 0	R 0	R 0
Overhead Costs	R 1 152 600	R 1 220 400	R 1 288 200	R 1 356 000	R 1 356 000	R 1 356 000	R 1 356 000	R 1 356 000	R 1 356 000
Cash Flow per Annum	R 5 738 400	R 6 540 600	R 7 342 800	R 8 215 000	R 9 085 000	R 9 955 000	R 10 825 000	R 11 695 000	R 12 565 000
Cumulative Cash before Interest	-R 10 905 103	-R 5 727 641	R 899 204	R 7 114 204	R 14 199 204	R 22 154 204	R 30 109 204	R 38 064 204	R 46 019 204
Interest	-R 1 363 138	-R 715 955	R 0	R 0	R 0	R 0	R 0	R 0	R 0
Project Cumulative Cash Flow	-R 12 268 241	-R 6 443 596	R 899 204	R 7 114 204	R 14 199 204	R 22 154 204	R 30 109 204	R 38 064 204	R 46 019 204
Cumulative Cash before Interest	-R 12 431 966	-R 7 600 762	-R 1 303 066	R 4 732 762	R 11 817 762	R 19 772 762	R 27 727 762	R 35 682 762	R 43 637 762
Interest (Plus Additional 1%)	-R 1 709 395	-R 1 045 105	-R 179 172	R 0	R 0	R 0	R 0	R 0	R 0
Cash Flow + Additional 1% Interest Paid	-R 14 141 362	-R 8 645 866	-R 1 482 238	R 4 732 762	R 11 817 762	R 19 772 762	R 27 727 762	R 35 682 762	R 43 637 762
Project Income Generated	R 13 800 000	R 15 000 000	R 16 200 000	R 17 400 000	R 18 600 000	R 19 800 000	R 21 000 000	R 22 200 000	R 23 400 000
Cumulated Income Generated (Y2)	R 45 075 000	R 60 075 000	R 76 275 000	R 93 675 000	R 112 275 000	R 132 075 000	R 151 875 000	R 171 675 000	R 191 475 000
INFRASTRUCTURE BREAKDOWN:									
Bulk water supply									
Bulk infrastructure									
Bulk water re-distribution									
Mechanization									
Cold storage & packing facility									
Drying facilities									
Size Related Infrastructure Cash Crops	R 0	R 0	R 0						
Size Related Infrastructure Dried Grapes	R 0	R 0	R 0						
Size Related Infrastructure Dates	R 0	R 0	R 0						
Size Related Infrastructure Table Grapes	R 0	R 0	R 0						
TOTAL	R 0	R 0	R 0						
TOTAL INFRASTRUCTURE									
TOTAL GRANTS / CASH INVESTMENT									
Cost of Production Inputs	R 8 061 600	R 8 459 400	R 8 857 200	R 9 255 000	R 9 585 000	R 9 915 000	R 10 245 000	R 10 575 000	R 10 905 000
Permanent Job Opportunities	48	48	48	48	48	48	48	48	48
Total Permanent Equivalent Jobs	132	132	132	132	132	132	132	132	132
Dividends Available Cumulative	0	0	0	0	4 284 204	12 239 204	20 194 204	28 149 204	36 104 204
Dividends Paid per Annum (Budgeted)	0	0	0	0	4 284 204	7 955 000	7 955 000	7 955 000	7 955 000

Henkries Cash Flow

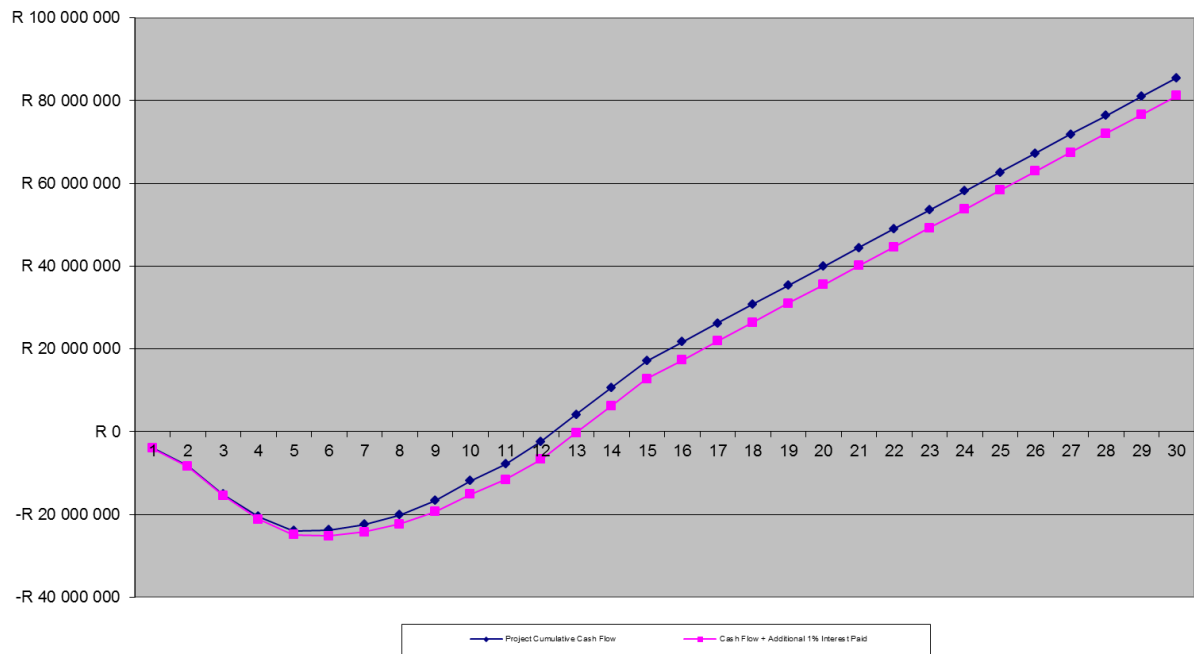
**Project Cumulative Cash Flow: Budgeted**



**Project Cumulative Cash Flow: Product Prices 10% Lower**



Project Cumulative Cash Flow: Yield 10% Lower



## Henkries Return on Investment

Project Net Benefit/Investment Ratio @ 5% Discount Rate (30-year Period)

