Draft Pricing Strategy III Socio-Economic Impact Analysis

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1 Introduction

1.1 Project Background

This exercise is taking place as a part of the Pricing and Economic Regulation Reforms (PERR) project (Project WP10465). The PERR project is a strategic project that was intended to enable DWA to have good policies on the pricing of water, cost reflective tariffs for the entire water value chain in South Africa with protection for the poor and a good funding framework for infrastructure development, operations and maintenance. The project officially commenced on 1 May 2012. This project is comprised of three main work-streams: the funding models work-stream, the pricing strategy work-stream and the economic regulator work-stream.

- The funding model work-stream aims to develop funding model for water infrastructure development and refurbishment,
- The pricing strategy work-stream is to revise the pricing strategy as set out in the National Water Act (NWA), and
- The economic regulator work-stream is meant to develop recommendation on the establishment of a model for an economic regulator for the entire water value chain respectively.

This project was put in place to meet the requirements of the NWA to revise the pricing strategy every five years. In the process of the revision, it is also necessary to review the things that are deemed to not be working in accordance to their intended purpose. As a result, the project provided an opportunity for DWA to think outside the box in a rapidly changing institutional context and to develop some innovative infrastructure finance models, approaches to water pricing and ideas around transformational economic regulation.

Given all the changes and recommendations put forward, it is important to do a high level socio-economic impact analysis. The aim is to determine exactly how water users (primarily) will be impacted by those changes, both socially and economically.

1.2 Socio-Economic Impact Analysis Definition

Socio-economic impact analysis is a systematic analysis used to identify and evaluate the potential socio-economic impacts of a proposed development on the lives and circumstances of people. If the analysis finds that the impacts are significant and adverse, the people responsible are then placed in a position to be able to find ways to reduce the magnitude of, remove or prevent these impacts from happening.

The impacts analysed can be direct and/or indirect impacts. What is of consequence is the magnitude of the impact and the direction of those impacts. Most importantly, such an analysis is meant to guide the focus of any counter measures that accompany the implementation of projects or changes to the landscape of any sector of legal framework.

While socio-economic impact analysis tends to focus on the avoidance of adverse impacts, it also provides a forum for planning how to maximize the beneficial impacts. Beneficial impacts can include:

- a better standard of living
- greater access to and from a community, and
- increased funding to improve social infrastructure and maintenance programs

Specifying how adverse impacts may interact with beneficial impacts, and identifying how to manage these impacts are important steps in socio-economic impact analysis. A specific focus of this analysis is the water sector users whose charges will change as a result of the changes to the pricing strategy.

1.3 Purpose of the Document

Throughout the PERR project there has been a circular process of revision and discussion of current provision of the pricing strategy as well as recommended changes to come of those provisions. A number of drafts of the revised pricing strategy have been made available to members of the project steering committee and the work-streams during the period of iteration. A draft has now been put together which is ready to be tested against the current and expected conditions.

This document aims to conduct a high level analysis of the potential socio-economic impacts that could result from the implementation of the proposed changes to the pricing strategy. A number of assumptions are made throughout the document in order to develop some preliminary conclusions. There are data sets that have been used in doing the impact analysis including production reports from Grain SA, the Department of Water Affairs' annual financial statements, tariff calculation sheets among others.

1.4 Document Structure

- **Section 1** is the introduction, within it is a brief background to the project, a definition of socio-economic impact analysis and the purpose of this specific document
- **Section 2** discusses the potential social impacts of the proposed changes to the pricing strategy
- **Section 3** discusses the potential economic impact of the proposed changes to the pricing strategy, and
- **Section 4** is the conclusion of the document

2 Social Impacts

One of the key objectives that was identified during the course of revising the pricing strategy was protecting the poor from rising water prices, as well as ensuring increased development of infrastructure to serve the poor at minimum cost to the poor and without increasing the financial strain on the fiscus. As a result, the draft pricing strategy III revision process focused on developing cross-subsidisation mechanisms that could properly distribute the costs amongst commercial water users and users who can afford to pay for their water use. The intended results of the cross-subsidization efforts is to increase the volume of water available to poorer users by developing more infrastructure intended to serve their water needs.

2.1 Social Infrastructure Development

One of the key paradigm shifts necessary in conceptualising the development path of water infrastructure is to realise that where water is provided there will be increased economic activity. It should not be the case that water infrastructure is only developed to provide water to areas where there is already economic activity. In other words, water ought to lead to economic activity and not the other way round. Identifying areas with the potential to become economic hubs and providing water to those areas must be the objective of water policy.

A new charge has been introduced in the place of the Return on Assets (ROA) charge, the Future Infrastructure Build Charge (FIBC). This charge is intended to be levied on the basis of identified water resources development projects aimed at providing water for previously disadvantaged groups – communities and commerce alike. This begins to shift the focus of the charge from being about earning some return on existing assets to developing assets that can help disadvantaged communities provide for their basic water needs and come into the mainstream economy.

2.1.1 Indigent Water Provision

There remain households in the country, mainly in rural settings, that do not have access to clean water for basic human needs. Moreover, the majority of the previously disadvantaged people in the country do not have access to enough water for enterprise purposes. It is important that infrastructure be developed to ensure water provision for those members of the population that have been identified as indigent as a start, and then for those who have the potential to become commercial farmers.

The FIBC will make it possible to create an additional pool of water to be distributed among social users. The process of reforming water use allocations is one that has not had much traction over the years, adding to the already existing available resources where possible can serve as a short to medium term measure of ameliorating the challenges related to water use allocations. In the long run however, given the fact that South Africa is a semi-arid country on average, there must be reform. The proposed changes in the pricing strategy make it possible to develop whatever additional water there is available for use by previously disadvantaged water users. This will require that their needs (basic and commercial) be prioritised above all others.

The new draft strategy has increased potential for water use redistributive without adversely affecting current users. The sustainability of redistribution without reallocation in South Africa remains questionable in the long-term. If more water resources infrastructure is developed, new

water connections that cover the part of the population that is economically challenged become an option in those areas where infrastructure in developed. These groups include black people, rural area resident, women and the very poor.

3 Economic Impacts

3.1 Government Revenue

3.1.1 Projected Additional Income

The draft Pricing Strategy III proposes a number of changes to the current version of the pricing strategy. Amongst these changes, there are those that are expected to lead to an increase in the revenue generated by DWA. The changes that are expected to lead to an increase in billing by DWA include the following:

- the removal of the caps on water charges to irrigation and forestry users
- the correct calculation of the depreciation charge from Depreciated Replacement Cost (DRC) to Current Replacement Cost (CRC)
- the addition of new charges that are currently not in the pricing strategy:
    - the Future Infrastructure Build Charge (FIBC)

Below are tables showing the revenue generated from the current pricing strategy versus the revenue that would be generated with the new pricing strategy. Before looking at the revenue generated it would be of some interest to see how what the average charges prescribed by the current pricing strategy were. The charges and associated revenue are specifically for the infrastructure charges in the pricing strategies.

Table 1: Average Current Pricing Strategy Charges

Old Pricing Strategy Average charges				
Operating Area	**O&M (c/m3)**	**Dep. (c/m3)**	**ROA (c/m3)**	**CUC (c/m3)**
Central Cluster	**15.27**	**12.03**	**30.10**	**42.06**
D&I	19.55	15.70	40.14	42.06
Irr.	2.57	1.13	0.33	-
Eastern Cluster	**18.46**	**2.13**	**24.32**	**-**
D&I	20.35	2.90	31.01	-
Irr.	16.28	1.24	15.97	-
Northern Cluster	**22.01**	**2.86**	**20.30**	**-**
D&I	28.58	4.58	37.93	-
Irr.	15.00	1.03	1.46	-
Southern Cluster	**8.70**	**4.74**	**31.55**	**-**
D&I	10.77	7.85	60.78	-
Irr.	6.50	1.44	0.47	-
Total	**15.33**	**6.94**	**27.60**	**42.06**

Due to the caps on the irrigation charges, the differences in the charges to the D&I users versus those levied on the irrigation users is significant. The average difference in the charge levied of D&I and irrigation are as follows:

- D&I is charged 9.72 c/m^3 more for O&M
- D&I is charged 6.55 c/m^3 more for depreciation, and
- D&I is charged 37.91 c/m^3 more for ROA

These differences, even after accounting for the differences in consumed water volumes (irrigation uses nearly 60% of all water), are reflected in the billed revenue from the two sectors. D&I is billed R1.584 billion more than irrigation – after having excluded the CUC revenue. Table 2 below shows the changes in the amount of revenue that would be generated if the changes put forward are implemented. What we see is that Irrigation will be billed a significant amount more in the draft pricing strategy than in the current pricing strategy – R848 452 886 more which is almost three times more than what irrigation is currently being billed. This is as a result of the removal of the irrigation charge caps. D&I will only be billed R162 136 202 more if the changes are implemented. This difference does not only represent the income gains, it also represents the income lost.

Table 2: Revenue Changes by Charge

Revenue	D&I: Old Pricing Strategy Revenue	D&I: Revised Pricing Strategy Revenue	Irr: Old Pricing Strategy Revenue	Irr: Revised Pricing Strategy Revenue
O&M	560 602 084	761 764 644	229 103 228	414 870 855
Dep.	295 880 301	266 371 632	47 495 098	496 752 110
ROA	1 021 844 796		17 336 146	
CUC	3 495 911 494	3 695 178 449		
FIBC		773 246 455		230 764 393
BWC	-	39 813 698		
Total	**5 374 238 676**	**5 536 374 878**	**293 934 472**	**1 142 387 358**

There is also indirect revenue that could accrue to the general government purse as a result of the newly developed water sources from the income generated through the FIBC. If the principle that water is developed in areas where it could spark economic activity then new sources of tax revenue could result from this.

3.1.2 Projected Additional Expenditure or Income Losses

The main revenue loss resulting from changes in the pricing strategy is that due to the scrapping of the Return on Assets (ROA) charge. The ROA has effectively been replaced by the FIBC so the loss of revenue is not equal to the total revenue previously generated by the existence of the ROA charge. An accurate reflection of the revenue loss is the net revenue loss (ROA revenue less FIBC revenue). Using the figures in Table 1, the net revenue loss resulting from the scrapping of the ROA charge and the introduction of the FIBC charge is R 35 170 094.

There are other potential revenue losses that could accrue to the government, though not directly to DWA depending on the impact on the charge increases that the pricing strategy's revision could lead to. If it were the case that the removal of the caps on the water charges levied to irrigation users would lead to the inability of some farmers to continue with their enterprises there could be a loss

of revenue in the form of lost tax revenue. The backward linkages would go to a level that this study does not intend to reach, but it could lead to lost income by farm workers and decreased economic activity in areas that are in need of it. This is, as stated before, subject to the extent the charge increases could have on the farming cost base. This will be explored at a high level at a later stage.

3.2 Water Charge Changes: Increases

3.2.1 Average Magnitude of Price Changes

There is no doubt that the changes proposed for the pricing strategy will lead to an increase in the charges levied on users. This is a result of an attempt to make the charges (and associated revenue) exactly cover the total costs of providing the water to the users. The approach is to be complimented by a set of targeted subsidies from the appropriate departments in order to protect emerging and previously disadvantaged water users. The biggest impact, as it per expectations, is on irrigation users because they enjoyed the highest level of general water use subsidization. The irrigation users in the central cluster have enjoyed the most subsidization (on a per cubic meter basis).

Table 3: Average Charge Changes

Operating Area	Old PS Average Total Charge (c/m3)	New PS Average Total charge (c/m3)	Diff (c/m3) New les Old
Central Cluster	**99.45**	**183.17**	**83.72**
D&I	117.46	191.68	74.22
Irr.	4.04	108.19	104.15
Eastern Cluster	**44.91**	**86.33**	**41.42**
D&I	54.25	94.83	40.58
Irr.	33.49	55.80	22.32
Northern Cluster	**45.17**	**101.75**	**56.58**
D&I	71.08	110.25	39.17
Irr.	17.48	71.23	53.74
Southern Cluster	**44.99**	**100.08**	**55.08**
D&I	79.40	108.58	29.18
Irr.	8.41	69.56	61.15
Total	**91.93**	**151.33**	**59.40**

The difference between the average total charge for all users in the old strategy and the new strategy is equal to 59.4 c/m^3. This is a significant (almost 65%) increase in the charge.

3.3 Rate of Prices Changes

In addition to the actual changes in the charges, it is worth considering the rate at which the charges change. If all the charges were to be moved to full cost charges in the first year of the strategy's implementation, the size of the increase faced by some users would be significant, the highest of which would be a 2 578% increase in the average water charge for irrigation users in the central cluster. This is a reflection of both the magnitude of the subsidies they currently enjoy and the need to smooth in the introduction of the charges. This makes the determination of a phase in period and

methodology important. In pursuit of full cost charge setting, necessary care must be taken to ensure the sustainability of agro-businesses and food security.

Table 4: Average Water Charge Changing Rate

Operating Area	Old PS Average Total Charge (c/m3)	New PS Average Total charge (c/m3)	Diff (c/m3) New less Old	Rate of Change in Charges
Central Cluster	**99.45**	**183.17**	**83.72**	**84.2%**
D&I	117.46	191.68	74.22	63.2%
Irr.	4.04	108.19	104.15	2 578.0%
Eastern Cluster	**44.91**	**86.33**	**41.42**	**92.2%**
D&I	54.25	94.83	40.58	74.8%
Irr.	33.49	55.8	22.32	66.6%
Northern Cluster	**45.17**	**101.75**	**56.58**	**125.3%**
D&I	71.08	110.25	39.17	55.1%
Irr.	17.48	71.23	53.74	307.4%
Southern Cluster	**44.99**	**100.08**	**55.08**	**122.4%**
D&I	79.4	108.58	29.18	36.8%
Irr.	8.41	69.56	61.15	727.1%
Total	**91.93**	**151.33**	**59.4**	**64.6%**

The phase in period has been set at 5 years. The challenge is now determining how the charges are to be phased in over that 5 year period. The charges are at different levels across the different clusters and within the clusters. The methodology must take into account the ability of the user to afford the charge increases on the one hand and the need to ensure that DWA is able to generate the revenue needed to cover a significant proportion of their costs. One approach is to place the burden of proving the need for charges to be phased in on the water users, with the 5 year mark as the cut off time at which full cost charges are implemented.

3.4 Affordability

A big consideration in the South African context is that of affordability of the water charges by water users. Where raw water is concerned, the main users that are likely to face affordability challenges are the poor communities, municipalities and emerging farmers. For that reason, it is the affordability of these groups of users we try to explore. The manner in which we try to determine the affordability of the water charges for these users are not standardised because of the differences in the available data.

3.4.1 Impact on Farming Costs

3.4.1.1 Farm Income Dynamics

In trying to measure affordability of water charges for farmers we have only been able to make use of a limited data set that is publicly available on the Grain SA website[1]. The data set includes information about the cost of inputs into the farming process. There is a data set with dry-land

[1] www.grainsa.co.za

farming inputs which does not include the cost of irrigation, which was not analysed, and a data set for irrigation crops.

The limitations of the data sets include the fact that the irrigation and overhead costs are not broken down into their various components. The irrigation cost component likely includes pumping costs which are not reflected. This means that the actual cost of water as an input in the farming process is not accurately reflected in this data set. However, this is likely a good enough approximation to use for the purposes of this analysis.

Table 5: Irrigated Maize Costs

Producer price estimates for Irrigation Maize for the production year 2012/2013						
Planning yield (tons/ha)	**8**	**10**	**11**	**12**	**13**	**14**
Gross value of production	**16 390**	**20 488**	**22 536**	**24 585**	**26 634**	**28 683**
Irrigation Costs as % of Farming Costs*	**989.76**	**1 123.45**	**1 191.82**	**1 201.37**	**1 269.74**	**1 341.38**
Total Directly Attributable Variable Costs (R/ha)	*15 436.35*	*17 521.43*	*18 587.73*	*18 736.80*	*19 803.10*	*20 920.30*
Total Overheads R/ha	*4 354.33*	*4 354.33*	*4 354.33*	*4 354.33*	*4 354.33*	*4 354.33*
Total Costs per ha for Physical Marketing R/ha	*19 790.68*	*21 875.76*	*22 942.06*	*23 091.14*	*24 157.44*	*25 274.63*
Total Per Ha Cost	**40 571.12**	**44 874.97**	**47 075.94**	**47 383.65**	**49 584.62**	**51 890.64**
Share of Directly Attributable Costs	**6.4%**	**6.4%**	**6.4%**	**6.4%**	**6.4%**	**6.4%**
Share of Total Cost	**2.4%**	**2.5%**	**2.5%**	**2.5%**	**2.6%**	**2.6%**[2]

The data sets we have are for irrigated maize and irrigated soya beans. The three main cost components can be classified into the "directly attributable variable costs", "overhead costs" and "physical marketing costs". The components of the directly attributable variable costs include:

- Seed, fertilizer and lime
- Fuel and repairs,
- herbicides, pesticides and air spray
- insurance, crop price hedging, and
- labour

The physical marketing costs include marketing commission, handling charges, storage costs and transport costs. The components of the overhead costs have not been broken down in the data set. It is for this reason, combined with the fact that the irrigation costs are also not broken down into various components that it is unclear exactly how much of the costs are directly attributable to water. What we have done is use the irrigation costs as the place holder for water costs for the purpose of this analysis.

[2] Grain SA, Industry Reports, http://www.grainsa.co.za/pages/industry-reports/production-reports.

Table 6: Irrigated Soya Beans Costs

Producer price estimates for Irrigation Soya Beans for the production year 2012/2013						
Planning yield (tons/ha)	**2**	**2.5**	**3**	**3.5**	**4**	**4.5**
Gross value of production	**9 262**	**11 578**	**13 893**	**16 209**	**18 524**	**20 840**
Irrigation Costs	**399.19**	**450.13**	**494.41**	**515.43**	**551.56**	**589.20**
Total directly attributable variable costs (R/ha)	*8 261.43*	*9 315.58*	*10 232.13*	*10 667.14*	*11 414.81*	*12 193.74*
Total Overheads R/ha	*4 354.33*	*4 354.33*	*4 354.33*	*4 354.33*	*4 354.33*	*4 354.33*
Total costs per ha for physical marketing R/ha	*12 615.77*	*13 669.92*	*14 586.46*	*15 021.48*	*15 769.14*	*16 548.08*
Total Per Ha Cost	**25 630.72**	**27 789.96**	**29 667.33**	**30 558.39**	**32 089.85**	**33 685.35**
Share of Directly Attributable Costs	**4.8%**	**4.8%**	**4.8%**	**4.8%**	**4.8%**	**4.8%**
Share of Total Cost	**1.6%**	**1.6%**	**1.7%**	**1.7%**	**1.7%**	**1.7%**[3]

Looking at Table 5 and Table 6 we see that irrigation costs make up less than 6.5% of the directly attributable costs, and have an even smaller share of the total costs. When this is taken in isolation it can lead to some inaccurate conclusions about the impact that raising price could have on the sustainability of agri-business.

3.4.1.2 Potential Impact of Future Costs of Farm Profitability

The potential impact on farm profitability is a key consideration in arriving at conclusions about the impact of the charge changes. It is one that will lead to more relevant conclusions about the sustainability of agri-businesses once the recommended changes are implemented.

In order for this analysis to be possible, however, a data set reflecting the income column of farms is needed. The data sets that are available only reflect the cost column. As a result we can only rely on the analysis done in the section above showing what percentage of costs irrigation takes up. The only conclusion that can be reached is that it contributes a small proportion to costs. Nothing can be said about the financial sustainability of the business overall because the data does not provide a holistic picture of the business.

This section therefore serves to highlight the importance of getting both columns of the income statement in assessing the financial viability of farms. A significant amount of work has been done in trying to acquire this information with little success.

3.4.1.3 Potential Impact on Food Costs

When discussing the impacting of increases in water charges, an input cost into the food production process, we have to discuss the impact it will have on food prices. The objective is to find out what happens to the price of basic foods if we assume that farmers pass all costs to consumers, given the price inelastic nature of demand for basic foods.

[3] Grain SA, Industry Reports, http://www.grainsa.co.za/pages/industry-reports/production-reports

From Table 4 above we see that the average required charge increase across all water users for all infrastructure charges is 64.6%. If we increase irrigation costs by this figure the contribution of irrigation to total costs increases accordingly, but the increase in the total costs is far smaller – at a maximum of 1.7% for irrigated maize and 1.2% for irrigated soya. See Table 7 (maize) and Table 8 (soya beans) for the breakdown of the impact of such an increase to irrigation costs.

Table 7: Impact of 64.6% Increase in Maize Irrigation Costs

Producer price estimates for Irrigation Maize for the production year 2012/2013						
Planning yield (tons/ha)	**8**	**10**	**11**	**12**	**13**	**14**
Gross value of production	**16 390**	**20 488**	**22 536**	**24 585**	**26 634**	**28 683**
Irrigation Costs	**1 629.14**	**1 849.19**	**1 961.73**	**1 977.46**	**2 090.00**	**2 207.91**
Total Directly Attributable Variable Costs (R/ha)	*16 075.73*	*18 247.18*	*19 357.64*	*19 512.89*	*20 623.36*	*21 786.83*
Total Overheads R/ha	*4 354.33*	*4 354.33*	*4 354.33*	*4 354.33*	*4 354.33*	*4 354.33*
Total Costs per ha for Physical Marketing R/ha	*19 790.68*	*21 875.76*	*22 942.06*	*23 091.14*	*24 157.44*	*25 274.63*
Total Per Ha Cost	**40 220.75**	**44 477.27**	**46 654.04**	**46 958.36**	**49 135.13**	**51 415.79**
Share of Directly Attributable Costs	**10.1%**	**10.1%**	**10.1%**	**10.1%**	**10.1%**	**10.1%**
Share of Total Cost	**4.1%**	**4.2%**	**4.2%**	**4.2%**	**4.3%**	**4.3%**
% Increase in Total Cost	1.6%	1.7%	1.7%	1.7%	1.7%	1.7%

When compared to Table 5 and Table 6, the impact of the increase of the irrigation costs on the total costs is insignificant. This outcome can assist in driving towards some conclusion of such an increase on the price of food – if all costs are passed on to consumers and all farming enterprises remain viable and sustainable. If we assume that the crops in question are themselves input in the food production process, the impact of this increase will be even more deflated and insignificant.

In the event that farmers have to absorb some of this increase and cannot pass all of it onto consumers, it becomes important to consider the profit margins of farmers. If the margins on crop production are so low as to lead to some farmers becoming financially unviable, the drop in crop supply will likely put even more pressure on the price of food. Determining the potentially lost supply quantity would be important for the calculation of the new market price that would prevail in conditions where the demand for basic foods remains the same. Due to the lack of sufficient data to answer these questions, the assumptions made thus far have to be taken as underpinning the conclusion: a 64.6% increase in irrigation cost will lead to an insignificant (below inflation) increase in the price of basic foods.

Table 8: Impact of 64.6% Increase in Soya Beans Irrigation Costs

Producer price estimates for Irrigation Soya Beans for the production year 2012/2013						
Planning yield (tons/ha)	**2**	**2.5**	**3**	**3.5**	**4**	**4.5**
Gross value of production	**9 262**	**11 578**	**13 893**	**16 209**	**18 524**	**20 840**
Irrigation Costs	**657.07**	**740.91**	**813.81**	**848.41**	**907.87**	**969.82**
Total directly attributable variable costs (R/ha)	*8 519.31*	*9 606.37*	*10 551.52*	*11 000.11*	*11 771.12*	*12 574.37*
Total Overheads R/ha	*4 354.33*	*4 354.33*	*4 354.33*	*4 354.33*	*4 354.33*	*4 354.33*
Total costs per ha for physical marketing R/ha	*12 615.77*	*13 669.92*	*14 586.46*	*15 021.48*	*15 769.14*	*16 548.08*
Total Per Ha Cost	**25 489.41**	**27 630.62**	**29 492.31**	**30 375.92**	**31 894.59**	**33 476.77**
Share of Directly Attributable Costs	**7.7%**	**7.7%**	**7.7%**	**7.7%**	**7.7%**	**7.7%**
Share of Total Cost	**2.6%**	**2.7%**	**2.8%**	**2.8%**	**2.8%**	**2.9%**
% Increase in Total Cost	1.0%	1.1%	1.1%	1.1%	1.1%	1.2%

3.4.2 Impact on Municipalities

3.4.2.1 Municipal Water Debt Levels

The numbers don't quite make sense as yet. We will need some help from DWA on these numbers.

3.4.2.2 Average Municipal Income Levels

3.4.3 Impact on Industry User

Industry users do not have the extensively capping applied to their charges that irrigation users have applied to their charges. By implication, the removal of caps will not lead to increases in the charges to these users that are as large as the increases it will for irrigation users. Due to the varied nature of the business activities of the industry user base it is more difficult to develop data that shows the average contribution of water to their cost base and how the increases would impact that cost base. It is expected that the impact on industry users will be minimal.

3.4.4 Impact on Poor Communities

In any situation where prices are increased the impact on the poor has to be considered. In the case of water, the impact on the poor is from two sources: the cost of water itself and the increased price of food that can result from the increasing cost of inputs into the food production process. As can be seen above, the impact coming from increased food costs is insignificant. The main concern is what it will do to the final price that communities will be charged.

The water that is or should ultimately be used by poor communities is potable water which is at the end of the water value chain. The raw water whose prices are determined by the provisions of the

pricing strategy is an input into potable water. The process of purification must take place before water ultimately gets consumed by poor communities. The consideration of this analysis must therefore be how much increasing the cost of raw water would impact the cost of producing bulk water for communities by.

At this point it is worth noting that the pricing strategy currently has no direct impact on the water prices set by municipalities and other water service providers. This is an important point because it makes clear the limited ability of the pricing strategy, ultimately, to determine what poor communities get charged. The best that the pricing strategy can do is keep the cost of raw water sustainably low and without unnecessarily burdening the government budget.

The mechanism of choice in protecting poor communities in the revised pricing strategy is cross-subsidization of the poor by other users. The FIBC has been developed for this purpose. The funds/revenue collected through the FIBC is intended to be ring-fenced and used exclusively for the development of social infrastructure to serve poor communities and emerging, formerly disadvantaged enterprise – whether in agriculture or other sectors. This ensures that poor users are not expected to pay the capital costs of the infrastructure that gets developed for their use.

The capital cost to be covered by the FIBC makes up 42.9% of the revenue generated from the non-CUC income – though it is only 20.9% of what gets spent on CUC related infrastructure. This means that for every R1 spent on social infrastructure, there is almost R5 spent on commercial infrastructure. This is significant because over 75% of South African households earn less than R4 000 per month which would suggest that more money should be spent on developing developmental/social infrastructure than commercial to correct the imbalances of the past. The FIBC remains a good approach to protect the poor from high water charges without further burdening the fiscus.

If the BWC gets approved as a second cross-subsidization tool, a proportion of the costs of operating, maintaining and refurbishing social infrastructure would also be reduced for poor users. The combination of these two mechanisms should offer sufficient cover for the poor to protect them from having to pay water charges that are greater than what they can afford, even as the water infrastructure available for the supply of water to their areas continue to increase.

4 Conclusion

What we find in this high level analysis is that the water charge increases will in fact have a minimal impact on the overall cost bases of irrigation users. The same is concluded for industry users. The main challenge in developing near certain conclusions is the absence and or limitations of the data available for this analysis. An increase of nearly 65% in the irrigation costs for maize and soya beans only lead to a maximum of 1.7% increase in the total cost. This is surely insignificant. However, because we do not have the income column of farmers, there is no way we can determine their elasticity to the price of water. We have assumed that farmers would be able to pass 100% of the water charge increase on to consumers because basic foods are price inelastic, which means that there will ultimately be zero impact on farmers.

Another concern was the food security on the country. The combination of the fact that basic foods are generally price inelastic and the fact that these are the foods needed for food security means

that the supply side of food will not be impacted – farmers will keep producing at the same level that they were before and just increase the price accordingly. The real challenge becomes the food security of households. However, even assuming that farm costs represent the full input costs for foods the increase of 1.7% (well below inflation) is likely to make food unaffordable.

Protecting the poor from high water charges is well taken care of in the pricing strategy through the use of cross-subsidization by other users. Overall, the new pricing strategy is likely to lead to reduced water charges for the poor as a result of very targeted subsidies to be extended to the most needy.