

물관리 재정의 평가: 한국-남아공

Water Management Financing in Korea and S. Africa

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요 지

정부가 생각하는 중요한 정책방향은 두 가지를 보면 알 수 있다. 바로 예산과 인력이다. 필요하다고 판단하는 곳에 정부는 예산과 인력이 투입되게 마련이다. 따라서 국가의 재정운용에 대한 평가를 해보면 어떤 것이 중요한 것인지에 대한 가치판단을 할 수 있다. 국가의 물관리 예산도 마찬가지이다. 국민소득과 여러 가지 사회경제적 특성에 따라 물관리예산은 국가별로 차이가 난다. 그러나 경제발전단계가 높을수록 높은 관리예산이 투입되는 것이 일반적이다. 과연 우리나라의 물관리예산은 적절한 것일까? 그러나 우리나라의 물관리는 여러 부처에 분산되어 있고 하천의 관리도 국가하천과 지방하천으로 구분되어 있기 때문에 이 질문에 답을 하기가 어렵다. 엄밀히 말하면 우리나라의 물관리예산이 연간 모두 얼마인지를 정확히 알지 못한다. 결국 적절한 수준인지를 평가할 수도 없다. 홍수방어와 용수공급이라는 시급성으로 인해 공공투자의 성격이 강했기 때문에 굳이 평가가 필요 없었을 수도 있다. 그러나 물관리가 과거와는 달리 복잡해졌고 따라서 물관리를 위한 정부의 재정계획과 집행 역시 여기에 맞게 보다 세심해져야 한다. 이제까지의 물관리예산이 사회적인 인프라를 건설하는데 주력했었다면 이제는 거버넌스와 생태계관리는 물론 물순환 전체를 위한 다양한 정책에 국가 재정이 투입될 필요가 있다. 그러나 이 같은 의사결정은 현재 재정계획과 투입입의 적정성과 타당성이 먼저 평가되어야 한다. 본 연구는 OECD내 다른 국가들의 물관리예산과 우리나라의 물관리예산을 비교분석함으로써 우리나라 물관리예산의 적정성을 평가하고자 한다. 특히 합리적인 재정구조를 가지고 있다고 판단되는 남아프리카공화국과의 비교를 통해 향후 우리나라의 과제가 무엇인지 검토하고자 한다.

핵심용어 : water financing, financial strategy, national comparison, Korea and S. Africa

1. Introduction

Korea has been actively implementing national water resources management plans to secure water supply and control flood for economic growth and human well-being. The investment in water resources management has been increased by average of 15.7% for the last four years. As of 2009, Korea spend 8.5 trillion won in water resources management. Ministry of Environment is in the lead in the absolute amount but Ministry of Administration shows the biggest increasing rate due to the high

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costs for disaster preventions against flood or typhoon.

Table 3-1. Investment Trend on Water Resources Management(Unit: trillion won)

	2006	2007	2008	2009	Average of Increasing Rate (%)
Ministry of Environment	2.1	2.2	2.4	3.2	17.4
Ministry of Land	1.3	1.4	1.6	2.5	22.6
Ministry of Agriculture	1.9	1.9	1.8	2.2	4.8
Ministry of Administration (Department of Disaster Management)	0.2	0.2	0.2	0.5	41.6
Total	5.5	5.7	5.9	8.5	15.7

Source: K-Water (2010)

In spite of aggressive national financing for water resources management, we rarely evaluate the effectiveness and rationality of the financing. This research try to focus on the evaluation of national water management financing and compare to other countries, especially South African case study.

2. Water Financing in Korea

It is not feasible to evaluate the costs of water governance in Korea yet. In 2004, National Assembly Budget Office was established according to the National Assembly Law. It was founded to support National Assembly by analyzing and evaluating issues related to the national budget, fund and fiscal policies. However, due to the short history and limited information, there hasn't been an comprehensive evaluation on the costs of water governance so far. But it is expected to be attempted soon as the investment in water resources management has been increasing as shown in the earlier part of this chapter.

Korea has been invested to construct the equipment and facilities for emergency countermeasures against flood. The Special Flood Fund has been allocated in 16 cities and 232 districts which are vulnerable to overflow. Table 2 shows the costs of flood control in Korea over the past few decades.

Table 2. Costs of Flood Control in Korea; Investment →Damage →Recovery

Period	Cumulative GDP(mil. won)	Investment for Flood Control	→ Damage	Flood	→ Recovery Cost
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		Amount (mil. won)	% of GDP	Amount(mil. won)	%of GDP	Amount(mil. won)	Compared to initial Investment (times)
80s(1980-8 9)	8,730,550	4,290	0.05	25,798	0.29	23,165	5.40
90s(1990-9 9)	36,532,792	21,824	0.06	51,898	0.14	75,652	3.47
2000-07	59,488,552	84,675	0.14	147,980	0.24	241,900	2.85

Source: Bank of Korea, National Emergency Management Agency (2007)

According to the data, one might suggest a significant room of improvement for the future. Korea seems to be spending much to recover the damage of flood. In 1980s, Korea invested only 0.05% of its GDP on flood control, but the damage of flood was 0.29% of GDP, 5 times more than the investment amount. And to recover those damages, Korea had to spend costs of 5.4 times bigger than the original investment. If Korea increases the investment in flood control from the start, the later recovery cost can be reduced. It would be difficult to reduce the damage amount of flood since it depends on the hydrological events of nature, but with more investment in flood control at the first place, Korea can expect to spend less money for recovery.

3. Water Financing in S. Africa

Table 3 presents the national water resources management budget allocations against water sector (including water services), national budget and GDP information. Firstly, it is interesting to note that the allocation to water resources has stayed relatively stable as a portion of total water sector allocation (at just below 60%). However, its proportion of the total national budget has dropped over the past decade to about 0.5% as national priorities have shifted to social spending and the expanded public works programme. Water resources management spending has remained relatively stable at about 0.15% of GDP, although there has been a decline in the annual recurrent expenditure for water resources management (from 0.15% of GDP in 2000 to only 0.11% in 2008).

It is not clear whether these trends are likely to change dramatically over the next 10 to 20 years, given the uncertain outcomes of the financial crisis for the South African government. Interestingly, the 2010-2014 DWA Strategic Plan indicates approximately 3% real increase in budget allocations to water resources management over the next three years, largely driven by increased allocation to infrastructure and support to the implementation of water resources management. This is a reflection of the current concern about the availability and quality of the nation's water

resources, following the energy crisis associated with inadequate development of generation infrastructure, an emerging recognition of water's importance as a catalyst or constraint on social and economic development (under Water for Growth and Development) and the delegation of water services implementation responsibilities to local government. Nevertheless, there may be less on-budget capital available for the 15 proposed water resources infrastructure schemes planned over the medium term (R20 billion over 10 years), implying a greater reliance on off-budget commercial sources of finance.

3 Water resources management expenditure compared to fiscal allocations

	Financial year		
	2008/2009	2004/05	2000/2001
Total operational WRM budget	R3 670 million	R1 940 million	R1 735 million
<i>Governance</i>	R1 420 million	R920 million	R635 million
<i>Infrastructure recurrent</i>	R1million	R1million	R900 million
<i>On-budget infrastructure</i>	R1million	R20 million	R200 million
WRM budget as % of water budget	57%	60%	58%
Total Water Sector budget	R6.5 billion	R3.3 billion	R3.0 billion
WRM budget as % RSA budget	0.47%	0.53%	0.75%
Total RSA Budget	R784 billion	R369 billion	R234 billion
WRM budget as % of RSA GDP	0.16%	0.14%	0.16%
Total RSA GDP	R2billion	R 1 395 billion	R 1billion

Sources: Stats SA and Annual Reports (above)

4. Conclusions

After liberated from the war in 1950, Korea started to implement successive national economy development plans. As the demand for water increases with the economy expansions, Ministry of Land and Ministry of Environment carried out the national water resources management plans.

As a result, Korea has shown fairly good improvement in terms of national water

supply, water treatment and water quality. As of 2006, 91% of the total population is supplied with piped water and sanitation treatment ratio is 85%. However, there are several suggestions for the future based on this draft.

- Korea should try to create public awareness toward the realistic rate of tariff. As of 2006, cost recovery ratio of water tariff and sewerage tariff is respectively 82% and 57.8%. Water is still considered as public goods which makes it hard to develop policies to raise the revenues.

- More comprehensive policy instruments are needed for the flood control. With the seasonal imbalance of precipitation and geographical disadvantages, Korea goes through severe flood every year. But the initial investment on flood control is much smaller than the recovery expenditure after the actual disasters.

- There should be available information on the costs of water governance. With the national agenda on green growth, the expenditure for water governance, ecosystem management and infrastructure operation have been constantly increasing. The comprehensive research and study on the governance expenditures are required for the better water resources management.

- Korea needs more financing instruments to raise the revenues. Most of the expenditures are covered by national budget. However, the demand of water and the natural disasters have been both increasing. Also, the infrastructure facilities are getting superannuated. To meet the needs for more expenses, Korea should develop new policy framework including private incentives and commercial funds.