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Water Supply and Sanitation in Lao PDR

Turning Finance into Services for the Future



This report is the product of extensive collaboration and information sharing between many government agencies at national and provincial level as well as development partners. A core team drawn from the Ministry of Health (Department of Hygiene and Health Promotion, Department of Planning and Finance, National Center for Environmental Health and Water Supply) and Ministry of Public Works and Transport (Department of Housing and Urban Planning, Department of Finance, Water Supply Regulatory Office) have been key partners with the Water and Sanitation Program (WSP) in analyzing the sector. The authors acknowledge the valuable contributions made by Department of Planning and Investment, Ministry of Planning and Investment, WHO, UNICEF, Plan International, JICA, UN-Habitat, SNV, AFD, Lao Red Cross, Care International in Lao PDR, Health Poverty Action, Helvetas, Nam Theun 2, CAWST, Child Fund and World Bank.

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WSP's Scaling Up Rural Sanitation is working with governments and the local private sector to develop the knowledge needed to scale up rural sanitation for the poor. The programmatic approach combines Community-Led Total Sanitation (CLTS), behavior change communication, and sanitation marketing to generate sanitation demand and build up the supply of sanitation products and services at scale. In addition, WSP works with local and national governments and the local private sector to strengthen the enabling environment—including institutional, regulatory, financial, service-delivery, and monitoring capacities—to achieve change that is sustainable. Starting in India, Indonesia, and Tanzania in 2006, Scaling Up Rural Sanitation is currently being implemented in more than a dozen countries. For more information, please visit www.wsp.org/scalingupsanitation.

This Working Paper is one in a series of knowledge products designed to showcase project findings, assessments, and lessons learned in the Global Scaling Up Sanitation Project. This paper is conceived as a work in progress to encourage the exchange of ideas about development issues. For more information please email worldbankwater@worldbank.org or visit www.wsp.org.

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Strategic Overview

Lao PDR has met the Millennium Development Goal (MDG) targets for both water supply and sanitation according to UNICEF/WHO Joint Monitoring Programme (JMP). However, national access remains low compared to other countries in the region and today there are still 1.9 million people without access to improved water supply and 2.4 million without access to improved sanitation.¹ The problem is especially acute in rural areas, with large inequalities in access between areas that are close to good roads and remote, inaccessible locations.

The Government of Lao PDR has adopted targets more ambitious than the MDGs as part of its commitment that the country will graduate from Least Developed Country status by 2020. The sector targets will not be achieved, however, without a concerted and coordinated multi-stakeholder effort and increased funding for the sector – particularly for rural water supply and sanitation. For this to happen, water, sanitation and hygiene (WASH) needs a higher profile within the national development strategy.

Inadequate water and sanitation services have negative impacts not only on public health but also on the economy. A 2009 study² by WSP estimated that poor sanitation and hygiene alone imposed a cost on the country equivalent to 5.6% of Gross Domestic Product. Universal access to improved water supplies and sanitation, together with the adoption of key hygiene behaviors, could deliver significant benefits to the country both in terms of health (including a reduction in diarrhea, malnutrition and stunting and in associated health care costs) and increased productivity (reduced collection time for water, less school and working days lost through ill health).

The key bottlenecks that currently impede progress towards national goals in the Lao PDR water and sanitation sector include:

- Incomprehensive sector investment plans, except for urban water supply;
- the lack of a comprehensive support system and viable operations and maintenance mechanisms to ensure the functionality and sustainability of existing and new rural water supply schemes;
- the absence of a national program to scale up rural sanitation and hygiene promotion;
- inadequate annual budget allocations, especially for rural water supply and sanitation;
- limited human resource capacity, especially at district and sub-district level, for the implementation of water and sanitation projects and for service delivery; and
- weak sector monitoring, especially for rural water supply and sanitation.

To achieve government water supply and sanitation access targets for 2020, capital investments of approximately US\$67million would be needed each year for water supply and US\$34 million for sanitation. For water supply, this amounts to roughly 3.2% of total anticipated annual government expenditure in the fiscal year 2012/13.³ The total for water and sanitation of US\$101 million is about 1.1% of the 2012 GDP of US\$9.299 billion.⁴ In addition, an average of US\$12 million per year would be needed to finance operations and maintenance.

Agreed priority actions to tackle Lao PDR's water supply and sanitation challenges and to ensure that finance is effectively turned into services are as follows:

¹ JMP (2013) Progress on Drinking Water and Sanitation – Update 2013

² WSP (2009)

³ IMF (2012, 25). The projected budget for 2012/13 was 16,382 billion kip or about US\$2.1 billion

⁴ World Bank. 2013. Accessed November 17, 2013. <http://data.worldbank.org/country/lao-pdr> viewed 17 Nov 2013

Sector-wide

- Identify funding sources for implementation of the Water Supply Sector Investment Plan 2012-2020 (for the urban sub-sector) and the National Plan of Action for Rural Water Supply, Sanitation and Hygiene.
- Strengthen sector monitoring and government-donor coordination through Joint Annual Sector Reviews (for urban and rural). These would focus on key indicators relating to sector goals; equity in the allocation of sector funding; the effectiveness of implementation processes; outcomes achieved including the quality and functionality of facilities and services.
- Establish a formally recognized sub-Technical Working Group on WASH, to allow for high level coordination between government and development partners, under the Health TWG.
- As part of sector investment plans, introduce consolidated monitoring of sub-sector funding from multiple sources, both government and external, including creating a dedicated budget line for WASH in the national budget.
- Develop an overarching WASH policy for both urban and rural areas and include a budget line for WASH in national budget.

Rural Water Supply

- Develop National Centre for Environmental Health and Water Supply (Nam Saat) capacity to implement the National Action Plan for Rural Water Supply, Sanitation and Hygiene by increasing staffing at district level and providing customized technical and capacity building support.
- Develop and test strategies to improve the sustainability of existing rural water supply schemes (for example, by professionalizing management and providing technical support to operators).
- Address inequalities by prioritizing investments and service delivery to underserved poor and remote communities.

Urban Water Supply

- Create incentives and obligations for water utilities to improve services by increasing their operational and financial autonomy; strengthening regulation and monitoring (including the use of performance contracts); and allowing tariffs to reach commercially viable levels.
- Create a more enabling environment for utilities to access private sector finance (for example, by providing government guarantees).
- Invest in capacity building of utility staff including support to the formulation and implementation of business plans.

Rural Sanitation and Hygiene

- Develop a national rural sanitation and hygiene program based on tested operational approaches, with clear implementation guidelines, a financing strategy, human resource and monitoring frameworks to scale up rural sanitation.
- Urgently increase Nam Saat operational funding and district-level staffing to enable their active engagement in sanitation and hygiene promotion at scale.
- Improve access to affordable and desirable latrines by encouraging private sector involvement in developing the sanitation market.
- Develop and test incentives and delivery mechanisms to better reach poor and remote under-served communities.

Urban Sanitation and Hygiene

- Clarify institutional roles and responsibilities relating to the management of urban wastewater and on-site sanitation facilities.
- Identify funding for a Wastewater Management Strategy and Investment plan to complement the Urban Water Supply Strategy, under the 2013-2020 Strategic Framework for the Water and Sanitation Sector.
- Develop and test operational approaches for improved fecal sludge management (including collection, transport, treatment and disposal).
- Build capacity for implementation of the wastewater management strategy.

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Acronyms and Abbreviations

ADB	Asian Development Bank
DFAT	Department for Aid and Trade of the Australian Government
BORDA	Bremen Overseas Research and Development Association
CLTS	Community-Led Total Sanitation
DEWATS	Decentralized Wastewater Treatment System
DHUP	Department of Housing and Urban Planning
GDP	Gross Domestic Product
JICA	Japan International Cooperation Agency
JMP	UNICEF/WHO Joint Monitoring Programme
LSB	Lao Statistics Bureau
LSIS	Lao Social Indicators Survey
MDG	Millennium Development Goal
MICS	Multiple Indicator Cluster Survey
MIREP	Mini Reseaux d'Eau Potable (Small Piped Water Systems)
MOF	Ministry of Finance
MOH	Ministry of Health
MOH-DHHP	Ministry of Health – Department of Hygiene and Health Promotion
MPI	Ministry of Planning and Investment
MPWT	Ministry of Public Works and Transport
MPWT-DHUP	Ministry of Public Works and Transport – Department of Housing and Urban Planning
NEDA	Neighbouring Countries Development Co-operation Agency (Thai aid)
NGO	Non-governmental Organization
NGPES	National Growth and Poverty Eradication Strategy
NPSE	Nam Papa State Enterprise
NSEDP	National Socio-Economic Development Plan
PDR	People's Democratic Republic
PEFA	Public Expenditure and Financial Accountability
PIP	Project Investment Program
PM	Prime Minister
PRF	Poverty Reduction Fund
SDC	Swiss Development Cooperation
SDA	Service Delivery Assessment
SNV	Netherlands Development Organization
SIP	Sector Investment Plan
UDAA	Urban Development Administration Authority
VUDAA	Vientiane Urban Development Administration Authority
WASH	Water, Sanitation and Hygiene
WASRO	Water Supply Regulation Office
WSP	World Bank - Water and Sanitation Program
WSRC	Water Supply Regulatory Committee

1. Introduction

Water and Sanitation Service Delivery Assessments (SDAs) are taking place in seven countries in the East Asia and the Pacific region under the guidance of the World Bank's Water and Sanitation Program (WSP) and local partners. This regional work, implemented through a country-led process, draws on experience of water and sanitation SDAs conducted in more than 40 countries in Africa, Latin America and South Asia.⁵

The SDA analysis has three main components: a review of past water and sanitation coverage, a costing model to assess the adequacy of future investments, and a scorecard that allows diagnosis of bottlenecks along the service delivery pathway. SDA's contribution is to answer not only whether past trends and future finance are sufficient to meet sector targets for infrastructure and hardware but also what specific issues need to be addressed to ensure that finance is effectively turned into accelerated and *sustainable* water supply and sanitation service delivery. Bottlenecks can in fact occur throughout the service delivery pathway—all the institutions, processes, and actors that translate sector funding into sustainable services. Where the pathway is well developed, sector funding should turn into services at the estimated unit costs. Where the pathway is not well developed, investment requirements may be gross underestimates because additional investment may be needed to 'unblock' the bottlenecks in the pathway.

The scorecard looks at nine building blocks of the service delivery pathway, which correspond to specific functions classified in three categories: three functions that refer to enabling conditions for putting services in place (policy development, planning new undertakings, budgeting), three actions that relate to developing the service (expenditure of funds, equity in the use of these funds, service output), and three functions that relate to sustaining these services (facility maintenance, expansion of infrastructure, use of the service). Each building

block is assessed against specific indicators and is scored from 0 to 3 accordingly. The scorecard uses a simple color code to indicate building blocks that are largely in place, acting as a driver for service delivery (score >2, green); building blocks that are a drag on service delivery and that require attention (score 1–2, yellow); and building blocks that are inadequate, constituting a barrier to service delivery and a priority for reform (score <1, red).

The SDA analysis relies on an intensive, facilitated consultation process, with government ownership and self-assessment at its core. Through the SDA process, an evidence-based analysis has been conducted to better understand what undermines progress in water supply and sanitation and what the Government of Lao PDR can do to accelerate progress. A series of meetings and urban and rural sub-sector workshops with government and external support agencies from mid-2012 to mid-2013, together with reviews of available data, budgets and reports, has provided the information on which the analysis in this report is based. Sources of evidence are referenced at the end of this report and in the annexes.

The analysis aims to help the Government of Lao PDR assess how it can strengthen pathways for turning finance into water supply and sanitation services in each of four sub-sectors. Specific priority actions were identified through consultation with government and other sector stakeholders and confirmed in a workshop with government decision makers and other sector stakeholders in April 2013. This report evaluates the service delivery pathway in its entirety, locating the bottlenecks and presenting the agreed priority actions to help address them.

The Water and Sanitation Program, in collaboration with the Government of Lao PDR, development partners and international NGOs active in the sector, produced this SDA report.

⁵ Further information is available at www.wsp.org/content/pathways-progress-status-water-and-sanitation-africa



2. Sector Overview: Coverage and Finance Trends

Coverage: Assessing Past Progress

The population of Lao PDR in 2010 was estimated to be 6.3 million, of which 4.5 million (71%) lived in rural areas and 1.8 million (29%) in urban areas.⁶

The country has experienced significant economic progress in recent years, with GDP growth averaging 7% per annum over the last decade⁷ and reaching 8.2% in 2012.⁸ It is now a lower-middle income country with an aspiration to graduate from least developed country status by 2020 and join the ranks of middle-income countries. Government data indicate that economic growth has been accompanied by a drop in poverty, with the headcount falling from 33.5% in 2002/3 to 28% in 2008,⁹ based on a nationally-defined poverty line, and aiming to reach 24% by 2015 as per the MDG.

Recent improvements in infrastructure and communications have delivered important benefits, especially to the rural population, which makes up 70% of the national total. The country nevertheless remains very poor in comparison to regional neighbours, and the benefits of economic development are not equally spread across the country. Urban areas and districts along the Thai border (where the five largest urban centers are located) have experienced rapid growth and

poverty reduction, but other areas continue to lag behind: the northern part of the country remains poorer than the southern and central regions, as do upland areas in comparison to lowlands. The urban-rural balance is also shifting, with small towns (which currently account for 13% of the population) growing at a rate of 4% to 5% per annum as compared to the national average of 2.5%.¹⁰

Poverty rates also vary according to ethnicity, with the Lao-Tai displaying lower poverty incidence. Although government support has been targeted at the poorest groups and regions, these have benefitted less from the process of economic development, and lack of access to infrastructure and markets remain barriers to growth and poverty reduction.¹¹

The Millennium Development Goal (MDG) targets for Lao PDR include providing 69% of the total population with access to an improved drinking water source and 54% with access to improved sanitation by 2015. Latest JMP figures indicate that both the water- and sanitation-related MDG targets have already been reached. However, the national NSEDP 2015 targets for water supply will likely not be met, while for sanitation this has been met due to high access in urban area (see table 2.1).

⁶ Source: Annex 2, Table A2.1. Based on government figures stated in the Seventh National Socio-Economic Development Plan 2011-2015 (NSEDP).

⁷ IMF (2011)

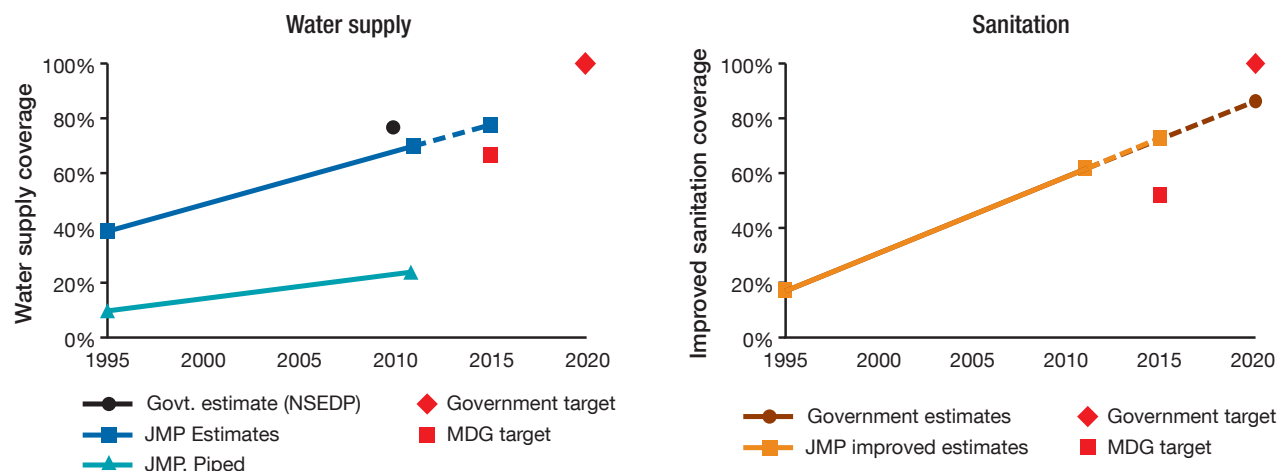
⁸ World Bank. 2013. "Country Dashboard - Lao PDR". Accessed December 15, 2013. <http://povertydata.worldbank.org/poverty/country/LAO>

⁹ National Statistics Center. 2013. Accessed November 10, 2013. http://www.nsc.gov.la/index.php?option=com_content&view=article&id=55&Itemid=80

¹⁰ World Bank (2010a)

¹¹ *ibid*

Figure 2.1 Progress and trends in water supply and sanitation 1995 - 2020



Source: JMP (2013); MOH (2012); and government targets used for SDA costing analysis.

Table 2.1 Current water supply and sanitation status and targets

	Status		Targets		
	2011 (JMP)	2011 (LSIS)	2015 (MDG)	2015 (National)	2020 (for SDA purposes)
Water supply					
Urban	83%	88%		65% ^a	100% ^e
Rural	63%	64%		75% ^b	100% ^e
National	70%		69%	80% ^c	100% ^e
Sanitation					
Urban	87%	91%		No target	100% ^f
Rural	48%	48%		65% ^d	80% ^f
National	62%		54%	60%	82% ^g

^a NSEDP target; this is for house connections to piped public water supply systems

^b NSEDP and National Action Plan for Rural Water Supply, Sanitation and Hygiene (2012)

^c NSEDP

^d NSEDP and National Action Plan for Rural Water Supply, Sanitation and Hygiene (2012)

^e National Growth and Poverty Eradication Strategy (2004)

^f National targets based on projected growth in access, used for SDA cost calculation

^g Calculated consolidated figure based on notional urban and rural sanitation targets and 2020 population estimates

Much of the progress in sanitation has resulted from the initiative of households who have installed facilities at their own expense, since government and external support in this area has been modest over the last ten years.¹² For water supply, however, there have been substantial investments in urban areas and many rural projects, though most of these have been on a fairly small scale, projects funded via the Poverty Reduction Fund being the exception.

This level of progress is encouraging, but it should be borne in mind that in rural areas where two-thirds of the population live, 1995 baseline figures were very low, so that meeting both MDG targets still leaves 31% of the total population without access to improved water supply and 46% without access to improved sanitation. Recognizing this, government has adopted more ambitious 2015 targets for urban water supply and for rural water supply and sanitation, via the National Socio-Economic Development Plan (NSED) 2011-2015 and National Action Plan for Rural Water Supply, Sanitation and Hygiene (2011-15). So far, however, no targets have been formulated for urban sanitation.

For 2020 (the target year used in the SDA financial model) the National Growth and Poverty Eradication Strategy (NG-PES) envisages 100% access to safe water nationwide, and while there is no national target for sanitation, a target of 82% was calculated based on projected growth in access in urban (100%) and rural areas (80%); see Table 2.1. Further details on the assumptions used in the SDA financial model are provided in Annex Two.

National coverage data also disguise significant disparities in access between locations and wealth quintiles. The 2011 Lao Social Indicators Survey (LSIS), for example, found that the use of improved drinking water sources stood at 66.5% in rural areas with road access, but only 42% in rural areas without a road. Similarly, the use of improved sanitation fa-

cilities was 51.2% in rural areas with road access and just 22.6% in those without. In terms of access across wealth quintiles, differences were not that stark for improved water supply but for sanitation were extreme, with almost 100% of the richest quintile using improved facilities but only 13% of the poorest.¹⁴ Conversely, open defecation within the poorest quintile stood at 82%, but almost zero in the richest. Overall, the number of people without access to improved sanitation is higher in the southern provinces than in the north, and the open defecation rate remains high: while the Southeast Asia regional average stands at 14%, and 19% in rural areas, in Lao PDR it is 32% nationally and 45% in rural areas.¹⁵

Nationally identified poor communities (based on government poverty criteria) are mainly located in the mountainous northern and eastern areas, where access by road is limited and difficult. These communities are also prone to water access difficulties. The unit costs of providing water supply and sanitation services to remote communities will be significantly higher than for lowland communities with easy access to roads and markets.

Regarding the water supply technologies in common use, 58% of urban residents have house connections while a further 25% use other improved sources including public taps, boreholes, protected springs or dug wells. In rural areas, just 5% have house connections while 58% use other improved sources such as public taps, boreholes, protected springs and dug wells.

In the case of sanitation, both urban and rural residents use on-site facilities since there is almost no sewerage in the country. In urban areas there is near-universal use of flush toilets which discharge into an on-site septic tank, storage tank or pit. In rural areas, households tend to have either a pour-flush latrine or none at all.

¹² WSP (2010)

¹³ In a validation workshop, participants stated the 65% rural sanitation target in Lao version of NSED but the English version says 60%.

¹⁴ MOH (2012a)

¹⁵ JMP (2013)

Investment Requirements: Testing the Sufficiency of Finance

Given the 2020 goals articulated in government policy or assumed for SDA purposes (see Table 2.1 above), Table 2.2 presents the estimated capital investment targets for all four subsectors.

The estimate of investment requirements is based on access rates, water and sanitation targets, population data, unit costs of facilities and lifespan and presumed technology mix using the following assumptions, which are explained in more detail in Annex 2:

- The annual population growth rate of 2.1% is extrapolated from NSEDP 7 (2010-15). The rural/urban split in 2020 is from a draft urban sanitation strategy, which cites a figure of 33% for urban areas in 2020.
- Unit costs of technologies were estimated from information provided by sector officials and information from project documents.
- The future technology mix is based on interviews with sector officials and has been discussed with officials in SDA validation meetings.

The investment requirements are calculated on an annual average basis using the SDA financial model. These represent not only the necessary expenditures for new facilities but also for replacing existing facilities (replacement costs). These are for capital ('hardware') costs only.

To calculate gaps in investment, the study estimated investments for 2013 to 2015 from various potential financing sources (government, donors and households) to derive an average annual anticipated investment per subsector (based on this 3-year average). This task was quite difficult because information had to be pieced together from many different sources. The SDA had excellent cooperation from the Lao Ministry of Planning and Investment, where a database of investment projects is kept by Lao-defined sectors

(water supply and sanitation are 'social' sectors), but the source of financing for some rural sanitation investments is not entirely clear (see discussion below). Other government and development partner investments are tracked by responsible ministries or agencies. Information on development partner projects and expenditures came from meeting development partners directly and from project documents.

Table 2.1 shows the annual capital expenditure requirements needed to meet the government's 2020 targets for water supply and sanitation. To meet these targets for access to improved water supply, US\$67.1 million on average for every year will be required. About US\$33.5 million every year will be required for sanitation. A slightly larger proportion of the required investment in water supply is for urban areas (US\$36.7 million per year). Although access to improved water supply is currently higher in towns and cities, the SDA financial model assumes that costs for replacing many facilities that are expected to wear-out during the period of analysis are in total quite high. Also, the government intends to move from a 2011 level of 72% of the urban population with access to piped water supply on the premises to 80% in 2020. (For rural areas, the comparable figures are 12% and 15%). To achieve the government's 2020 targets for rural areas, an estimated 374,000 people will need to gain access to improved water supply every year until 2020, while every year during the same period, an estimated 313,000 people will need to gain access to improved sanitation. Urban areas account for most of the required sanitation investments, which is caused by the assumption that 15% of urban households will be connected to sewerage in 2020, up from 5% in 2011. Overall, 38% of water supply investment requirements are expected to come from government and development partners ('public' sources). Just 5% of sanitation requirements are expected to come from these sources, owing to the assumption that on-site sanitation is expected to dominate in 2020, and the source of financing for this is assumed to be overwhelmingly from households (except for some few subsidies for the poor).

Table 2.2 Coverage and investments figures

	Coverage		Population requiring access	Annual capital requirement				Anticipated annual investment (2012-2015)		Deficit
	2011	Target 2020		New	Replace-ment	Other ^a	Total	Public ^b	Assumed household ^c	
	(%)	(%)								
Rural water supply	63%	100%	250	10.6	19.8	0.0	30.4	6.1	2.4	-21.9
Urban water supply	83%	100%	124	15.0	21.7	0.0	36.7	19.9	1.9	-14.9
Water supply total	70%	100%	374	25.6	41.5	0.0	67.1	26.0	4.3	-36.8
Rural sanitation	48%	80%	209	3.9	10.8	0.0	14.6	0.2	2.3	-12.2
Urban sanitation	87%	100%	104	7.6	10.2	1.0	18.9	1.4	2.3	-15.2
Sanitation total	62%	82%	313	11.5	21.0	1.0	33.5	1.6	4.5	-27.4

a Estimated other requirements include rehabilitation or investment in treatment facilities that do not lead to an expansion in access (already connected households)

b Public Expenditures include domestic (government sources) and external sources (development partners, NGOs and private sector); see table 3 below

c Household investment is calculated as a user share leveraged by government capital expenditure, which is likely to be small, especially for onsite sanitation. Actual future household investment would largely depend on the ability to elicit household financing in facilities through community mobilization and demand generation, so-called “software” spending.

Source: SDA financial analysis (see annex 2)

In addition, an average of US\$11.9 million per year would be needed to finance operation and maintenance of current and future infrastructure, with US\$3.7 million for urban water supply, US\$3.5 million for rural water supply, US\$2.1 million for rural sanitation, and US\$4.0 million for urban sanitation. These O&M costs are ideally fully funded through user fees, in line with Lao PDR cost recovery policies.

Table 2.3 below presents in more detail the anticipated sources of public expenditure. Historically, a great deal of capital financing for water supply and sanitation (especially urban water supply) has been from external sources. External sources appear have accounted for over 90% of the capital investments in water supply and sanitation in the last three years. This is partly because government contributions to large projects are often in the form of “software” such as project management, and partly because the

vast majority of capital investment has been in urban water supply. There has been little public investment in sanitation either urban or rural, except for some subsidies linked to water supply in urban areas and a small and difficult to account-for amount of subsidies for the poor and by NGOs in rural areas. On-site sanitation is dominated by household investment, recognizing that actual future household investment may be much higher if government is successful at eliciting households to invest in on-site sanitation.

For rural water supply, SDA estimates conclude that the Lao PDR government has supplied an average of 60% of the annual capital investments each year, although this estimate is probably overstated since much of the funding may have come from the Poverty Reduction Fund (which is supported by the Lao PDR government and external sources) and other off-budget sources.

Table 2.3 Anticipated sources of public expenditure

Sector/Sub-sector	Local Government	External ^a		Total
		Development Partners	NGOs and Private	
Water Supply	5.6	19.0	1.4	26.0
Rural	3.9	2.2	0.0	6.1
Urban	1.7	16.8	1.4	19.9
Sanitation	0.2	1.4	0.1	1.6
Rural	0.0	0.1	0.1	0.2
Urban	0.2	1.3	0.0	1.4

Notes: Totals may not add due to rounding.

Source: SDA estimates based on information supplied by government, development partners, and NGOs.

^a External Investment: While there is NGO investment in water supply, it was not possible to determine the investment amount comprehensively, since many small NGOs operate 'off budget'. Most NGO expenditure in sanitation, especially in rural sanitation, is on non-capital spending ('software'), and an estimated amount has been included for capital spending. There appear to be several projects whose financing source is private, however these amounts were difficult to determine and hence might be underestimated.

External sources support the sector to a much higher degree than external funding for the Lao PDR budget overall. Over the last four Lao fiscal years (2009/10-2012/13), capital expenditure has accounted for roughly half of the annual national budget. About half of this capital expenditure is from external sources, so that overall external financing has accounted for an average of 21% of total government expenditure.

As mentioned above, the main complication in identifying sector and sub-sector expenditures relates to off-budget financing, both domestic and external. This has played a significant role in capital expenditures in Lao PDR but consolidated information on the sources and extent of this type of funding is not available at national level. An estimated 56% of domestically financed capital spending in 2009/10 was off-budget and included, for example, direct payments to contractors for provincial or local government projects. Following efforts to incorporate off-budget spending in the national accounts, this level is projected to fall to 13% in 2012/13.¹⁶

A significant proportion of off-budget expenditure may arise from special funds supporting capital investments in water supply or sanitation at provincial or lower levels. One example is the Poverty Reduction Fund (PRF) which operated from 2003-11 with a budget of US\$42 million; a second PRF is now underway, with USD\$67 million provided by the Lao PDR government and development partners including the World Bank, Switzerland and Australia. The fund is under administration by the Prime Minister's office and has reportedly enabled more than 668 villages to gain access to clean water systems with around 818 water points. It appears that many of these projects have been included in the Ministry of Planning and Investment (MPI) database, but it is not clear whether they are included in the national budget or precisely what the source of funding is. The SDA financial model takes MPI database projects that appear to be rural projects into account as government expenditure, which could mean that government expenditures are overstated.

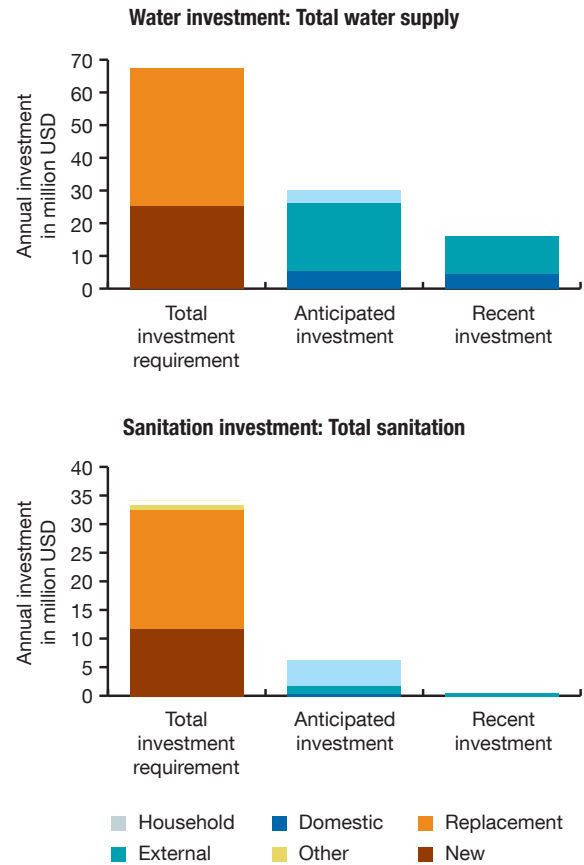
The estimate for anticipated capital expenditure for urban sanitation includes a sewerage project funded by a grant

¹⁶ IMF (2012)

from ADB in Savannakhet. The capital expenditure estimate for rural sanitation includes some subsidies from small NGOs and others. Part of the reason for little to no capital expenditure for rural sanitation is that households are expected to be self-investing in these facilities except for some subsidies for poor areas and households. Incentives for latrine construction in the form of free water connections have been used in past urban projects, but it seems unlikely that this will be repeated in the future. Households have been the single largest source of sanitation financing in the past.¹⁷ The SDA model calculates household investment as a figure leveraged by government capital expenditure, which is likely to be small, especially for onsite sanitation. Actual future investment is likely to be much higher in case household financing is successfully leveraged through government and external ‘software’ spending. In the following charts, the deficit in sanitation investments comprises a combination of the expected household self-investments resulting from government-led promotion, plus targeted subsidies/incentives for sanitation improvements.

The following charts summarize the information presented in tables 2.2 and 2.3.

Figure 2.2 Required versus anticipated (2012-2014) and recent funding (2009-2011)



¹⁷ Robinson, A. (2010)

3. Reform Context

A longstanding concern among sector stakeholders has been the low priority afforded to WASH on the national development agenda—particularly rural water supply and sanitation. The subject has limited visibility at policy level and institutions struggle to compete for resources within the ministries of Health and Public Works and Transport, which have primary responsibility for water supply and sanitation. As a result, activity in the sector has long been heavily donor-dependent. There have, however, been some important developments in the policy and institutional framework for WASH over the last two decades and the sector is steadily gaining more strength and prominence.

Urban Water Supply and Sanitation

In 1999 a Water Policy Statement was issued under which responsibility for public water supply systems was reassigned from the former national water utility, Nam Papa Lao, to 17 provincial water utilities known as Nam Papa State Enterprises. A Sector Investment Plan (SIP) was adopted at the same time and significant investments were made in the following years. The 1999 SIP was updated in 2004 to reflect the government's growing emphasis on equitable development by improving small towns, particularly in the poorest districts.

In 2008, an Urban Water Supply Sector Road Map was adopted, followed in 2009 by a draft Wastewater Strategy and Investment Plan; both initiatives were supported by ADB. In the same year, urban water supply regulation was strengthened with the creation of a Water Supply Regulation Committee and Water Supply Regulatory Office as its secretariat.

More recently, a Water Supply Law came into force in 2010 to underpin the policy framework for the sector. Amongst other things the law confirmed that responsibility for piped public water supply schemes lies with the provincial utilities, with Nam Saat responsible for non-networked (in other words, rural) schemes.

Current policy encourages private sector participation in service provision and indicates that utilities should adopt a commercial orientation. In practice this has not happened, though the utilities now have a significant degree of financial autonomy and depend on revenue from customers to meet their operating costs (though not the cost of new investments).¹⁸ There has also been some progress with private sector participation in the development and operation of small piped schemes, but only limited involvement so far in the financing or operation of provincial utilities.

While the draft wastewater strategy of 2009 was not taken forward by government, the 2008 Road Map paved the way for drafts of two key documents issued in 2013: a Strategic Framework for the Development of the Urban Water Supply and Sanitation Sector 2013-2030 and a Revised Water Supply Sector Investment Plan covering the period 2012-2020. The latter has now been approved.

The Strategic Framework consolidates and extends a number of ongoing initiatives in the sector to build the capacity of provincial utilities and create a policy and institutional environment more conducive to private sector participation and sustainable service delivery. Specific aims are set out in

¹⁸ The Mini-Réseaux d'Eau Potable (meaning small-scale water supply) programme (MIREP), developed seven piped water supply schemes from 2004 onwards, with a further two started in 2011. Each one is managed by a local private operator.

ten goals that are to be achieved through the implementation of four programmes designed to:

1. Strengthen the institutional framework and capacity of the sector.
2. Improve the enabling environment, via legal amendments and technical guidance.
3. Expand piped water supply coverage, and improve service quality, through rehabilitation and new investments, with special attention to small and emerging towns. Some pilot work on decentralized wastewater management and feasibility studies on centralized sewerage are also envisaged.
4. Introduce corporate planning for provincial water utilities nationwide, building on earlier work under the ADB-funded Small Towns Water Supply and Sanitation Sector Project. This will be accompanied by capacity building support for the utilities in areas such as business and financial management; billing and accounting; operation and maintenance; and meeting the requirements of service agreements based on Key Performance Indicators (KPIs) and regulated by WASRO.

Table 3.1 Sector milestones

Year	Event
1998	Establishment of National Centre for Environmental Health and Water Supply (Nam Saat) within Ministry of Health, with responsibility for rural water supply plus sanitation and hygiene promotion in both urban and rural areas.
1999	Water Policy Statement (PM Decree 37 / 1999) establishes new sector framework for service provision. Responsibility for piped water supply devolved to provincial utilities (Nam Papa State Enterprises, NPSEs). Sector Investment Plan adopted with national and provincial coordination of government and donor investments.
1997	First National RWSS Strategy adopted. New investments to be made on bottom-up, demand-responsive basis.
2004	RWSS Strategy revised. Implementation of the demand-responsive approach detailed in a 'Seven Step Process' for village WSS projects. Poor and remote communities prioritized for support.
2005	Water Supply Investment Plan 2005-2020 adopted (update to 1999 plan)
2005	Enterprise Law strengthens framework for provision of urban water supply services. Government encourages private sector participation in sector financing and service provision. NPSEs to become financially autonomous and adopt a commercial orientation.
2008	Establishment of Water Supply Regulatory Committee (WSRC) and its secretariat, the Water Supply Regulatory Office.
2010	Water Supply Law introduced, to underpin current policy and institutional arrangements.
2010	New Rural Water Supply and Sanitation Strategy formulated via a multi-stakeholder process, with targets to 2015 in line with NSEDP.
2012	National Action Plan for Rural Water Supply, Sanitation and Hygiene adopted, based on draft RWSS strategy. Proposes new mechanisms for sector planning, coordination and monitoring including a sub-sector working group, annual sector reviews and adoption of a sector investment plan.
2013	Draft new documents issued: Strategic Framework for the Development of the Urban Water Supply and Sanitation Sector 2013-2013; and Revised Water Supply Sector Investment Plan.

In the area of finance, the draft strategy also includes a government commitment to fund the development of two water supply systems by 2020 and increase sector budget allocations by 10% per annum. The SIP is discussed further in section 5.

The urban sanitation sub-sector is in an early stage of development, reflecting the fact that there is, so far, no sewerage in Lao PDR. Relatively low urban population density means that on-site services are generally viable, though there has also been some use of decentralized wastewater treatment systems on a pilot scale. To some extent this explains the limited references to sewerage in the draft Strategic Framework, though the lack of attention to fecal sludge management - essential for the effective long term use of on-site sanitation - is an important gap.

Rural Water Supply and Sanitation

In the rural sub-sector, there have been three principal policy developments during the last two decades. The first was the assignment of lead responsibility for rural water supply, sanitation and hygiene promotion (plus hygiene promotion in urban areas) to Nam Saat, the National Centre for Environmental Health and Water Supply. Established in 1998, Nam Saat is one of a number of centers operating under the umbrella of the Department of Hygiene and Health Promotion at the Ministry of Health (MOH). The second was the adoption of a National Rural Water Supply and Sanitation Strategy in 1999, with an update in 2004. The strategy was a milestone for the sector in that it signalled the end of the established supply-driven approach to new investments; future projects would instead be developed on a demand-responsive basis. In support of this the strategy defined a new 'seven step' process for the implementation of village level projects.

While the strategy marked an important step forward for the sector it did not - despite its title - establish a national operational strategy, for example by defining baselines and targets as a basis for sector monitoring; setting out the roles

and responsibilities of government and other players at national, provincial and local levels; or introducing an investment plan and financing mechanism. Rural WASH has for many years been marginalized within MOH budgets and in the absence of any other government-funded national program, the strategy has had limited impact and most new investments continue to be funded by development partners. Having said this, Nam Saat usually plays a key role in implementation to the extent possible given its limited staffing at district level.

In recent years, the Ministry of Health and development partners have recognized the limitations of the 1997/2004 strategy and with UNICEF support a new Draft Rural Water Supply and Sanitation Strategy was produced in 2011 and subsequently adopted under the revised title of 'National Action Plan for Rural Water Supply, Sanitation and Hygiene.' The comprehensive Action Plan covers the period 2011-15 and, amongst other things, proposes sector targets, a new monitoring framework and improved government-donor coordination including the introduction of joint annual sector reviews at which progress will be reviewed against a set of key indicators.

The third significant development, which happened within the last five years, has been the introduction of Community-led Total Sanitation (CLTS) in several locations and, more recently, sanitation marketing. These initiatives were spearheaded by a number of international development agencies including SNV, WSP and Plan International (amongst others) but with growing support from MOH for the 'no subsidy' approach to the promotion of household toilets. The new Action Plan indicates that hardware subsidies for household toilets should not be provided except for the very poor.

Sections 4 to 6 below highlight progress and challenges within the WASH sector across three thematic areas: the institutional framework, finance, and monitoring and evaluation. The scorecards for each subsector are presented in Sections 7 to 10.

4. Institutional Framework

Priority Actions for the Institutional Framework

Action	Lead responsibility
Create incentives and obligations for water utilities to improve service provision by increasing their operational and financial autonomy; strengthening regulation and monitoring (including the use of performance contracts); and allowing tariffs to reach commercially viable levels	MPWT-DHUP
Provide capacity building support to utilities to enable improved operational performance	MPWT-DHUP/Development Partners
Develop the capacity of Nam Saat to implement the National Action Plan for Rural Water Supply, Sanitation and Hygiene by increasing staffing at district level and providing customized technical and capacity building support	MOH-DHHP, together with Nam Saat and Development Partners
Establish a formally recognized sub-Technical Working Group on WASH, to allow for high level coordination between government and development partners, under the Health sector working group TWG	MOH-MPWT–Development Partners
Develop an overarching policy on WASH for both urban and rural areas	All sector agencies

Decentralization is a work in progress in Lao PDR but the government has recently taken steps to advance policy implementation via a two-year pilot whereby selected pilot provincial governments will function as ‘Strategic Units’, their Districts as ‘Enhanced Capacity Units’ and Villages as ‘Development Units’ (also referred to as ‘Implementing Units’). It is evident that government intends to increase the power and responsibilities of the lower tiers of government, with the aim of improving service delivery to villagers. The implications of the decentralization process for the water and sanitation sector are at this stage unclear and a review at the end of the two-year pilot could inform the direction of sector developments in line with the decentralization process. Due to the limited implementation capacities

through the line agencies at provincial and district levels, the decentralization process could provide opportunities for strengthening local services delivery through sub-national authorities.

At present, the WASH sector in Lao PDR is split into distinct urban and rural components and no comprehensive overview of sector status is available from government at national level, neither a comprehensive WASH policy. Water supply and sanitation is one of many subjects managed by the parent ministries of Public Works and Transport (for urban water and sanitation) and Health (for rural). It is not surprising, therefore, that the subject tends to be marginalized in resource allocation at national level, particularly

within the Ministry of Health. The vast majority of water supply investments in recent years have been funded by donors and by households themselves, although the full extent of self-supply is not known. This situation highlights the need for effective planning and coordination of government and donor inputs to the sector, both technical and financial.

Sector Coordination

Sector coordination is well advanced for urban water supply in comparison to the other sub-sectors, not least because the Ministry of Public Works and Transport (MPWT) has a sector investment plan, periodically updated, which provides a framework for the deployment of external support. There is an Infrastructure Technical Working Group under MPWT with both government and donor membership, and an annual Round Table Meeting is held to review progress in urban development generally, though not specifically for water supply. Donor support is also incorporated into provincial budgets and investment plans. The same arrangements would apply for urban sanitation but there has not, so far, been any significant government or donor investment in this sub-sector.

The new Action Plan proposes to establish a more formalized approach including a joint annual sector review specifically for rural WASH.

In the case of rural water supply and sanitation, an informal Technical Working Group has existed for some time and is well-attended by development partners. This operates outside of the government framework, however, and is not connected to decision-making processes in the sector. Government recognizes the need to improve sector coordination and at the 2012 international High Level Meeting of Sanitation and Water for All, the Minister of Health and Chair of the National Commission on Mother and Child Health announced that, by 2014, a formal WASH coordina-

tion mechanism encompassing both government and development partners would be set up under the joint stewardship of MOH and MPWT.¹⁹ There has been some recent progress in this area and the Department of Hygiene and Health Promotion within MOH now hosts a regular WASH Technical Working Group meeting to which selected development partners are invited, as are representatives of DHUP and WASRO. This is an encouraging development, though the group is positioned at low level within the government hierarchy and as such has limited power. Ideally, the group is to be established as a formal MOH-MPWT-Development Partner Working Group and repositioned as a sub-group of the main Health Technical Working Group, with a high-level chair.

Urban Water Supply and Sanitation

In general, institutional arrangements for urban water supply are more developed than for rural, and the sub-sector is better funded. Urban water supply falls under MPWT and specific responsibility lies with the Water Supply Division the Department of Housing and Urban Planning (DHUP). The draft Strategic Framework issued in 2013 indicates that this Division will shortly be upgraded to the status of a Department. There are 17 provincial water utilities, officially called Nam Papa State Enterprises (NPSEs), which operate public water supply networks.

The NSEDP stipulates that NPSEs should operate as financially autonomous corporations. They do not, therefore, receive any direct operating subsidies from provincial government. Despite this level of financial autonomy, NPSEs have yet to adopt a commercial orientation and are under little pressure to do so, though the draft Strategic Framework notes that the majority do now recover all or most of their operating costs.

Staffing levels are high relative to regional benchmarks, and the utilities follow government administrative procedures,

¹⁹ See http://www.sanitationandwaterforall.org/files/LAO_PDR_-_Statement_to_2012_HLM_EN.pdf. Seven commitments were made in total and progress is being monitored and reported on to SWA.

including remuneration policies, making it doubly difficult for service providers to attract capable personnel in a country that already has a dearth of professional staff in the sector.

While there have been some promising first steps in fostering private sector participation in the development and operation of small piped networks, tariff controls and the lack of autonomy in service provision mean that the environment is not yet conducive for private sector participation in the operation of large urban schemes.

Established in 2008, the regulator, known as the Water Supply Regulatory Committee (WSRC), and its secretariat, the Water Supply Regulatory Office (WASRO), have so far focused on bi-annual tariff reviews and the preparation of annual performance reports of NPSEs. So far, however, tariffs have not been raised to levels that would enable the utilities to achieve financial sustainability and it is widely acknowledged that performance monitoring is weak.

WASRO is currently developing performance guidelines and standard agreements to improve the monitoring and regulation of water utilities. It is also proposed to bring small independent suppliers within this monitoring and regulatory framework. A major concern of WSRC and WASRO is the lack of capacity of their own staff and those of the NPSEs (plus in due course private providers) to undertake their respective functions and responsibilities.

Lao PDR does not currently have municipalities though there are plans to introduce them within the next ten years. Lead responsibility for the development of urban sanitation rests with the Urban Development Division of MPWT. Outside of the capital, provision of urban infrastructure and services is assigned to Provincial Urban Development Administration Authorities (UDAAs). This responsibility covers infrastructure and services relating to drainage, solid waste and wastewater.

Within Vientiane, responsibility for the management of human waste is not clearly assigned and in practice is split between Vientiane Urban Development Administration Authority (VUDAA); the Department of Urban Housing and Planning of MPWT; and the Public Works and Transport Institute, which also falls under the MPWT. The lack of clarity is partly explained by the fact that Vientiane has no sewerage and the management of human waste has long been regarded by government as primarily a household responsibility, though there is at least public provision for the dumping of septage at a government landfill site outside the capital. As population density increases and sewerage is gradually introduced, it will be essential to define more clearly institutional roles and responsibilities for the management of urban wastewater.

Nam Saat, meanwhile, has a role to promote sanitation and hygiene in both urban and rural areas, but its involvement in urban sanitation tends to be not on an institutional basis but via individual officers participating in donor-funded projects.

Rural Water Supply and Sanitation

Nam Saat is responsible for the development of rural water services and the promotion of hygiene in both urban and rural areas. Its mandate in relation to rural water supply (specifically non-networked schemes) was confirmed by the Water Act 2010, but it has limited technical and human resources in this area (typically just one or two officers per district) and to date the Ministry of Health has not funded and spearheaded any substantial WASH investment programs.

Development partners play a very significant role in WASH in terms of both funding and technical assistance. However, with the exception of urban water supply, there is to date no national or provincial mechanism for coordinating government and donor inputs. In the absence of budget support or multi-donor basket funding, donor-funded projects are mostly developed on a stand-alone basis, though within

these limitations government-development partner co-operation is generally good.

A number of national and international NGOs are active in rural areas and the Lao Women's Union (a government-sponsored mass organisation) is also a significant player. Due its huge membership and close relationship with government it has capacity and influence at both local and national level.

At present, national private sector capacity in WASH is quite limited, which reflects not only the small urban population of Lao PDR but also the fact that service provision was for

many years regarded as the preserve of government. This is slowly changing as government policy now actively encourages private sector participation in all areas of WASH. A number of independent operators are now providing water supplies via small piped schemes and the scaling up of sanitation promotion via CLTS and sanitation marketing is predicated on strengthening the local supply of hardware and skilled labour via the private sector.

Large-scale private sector participation in the financing and operation of networked services is still some way off, however, as the adoption of a commercial orientation to service provision has not yet taken root.

5. Financing and Its Implementation

Priority Actions for Financing and Its Implementation

Action	Lead responsibility
Identify funding sources – including domestic commitments – for implementation of the draft Water Supply Sector Investment Plan 2012-2020, including creating a separated budget line for WASH in the national budget	DHUP/MPWT
Create a more enabling environment (for example, by providing government guarantees) so that water utilities can access private sector finance	DHUP/MPWT
Secure essential funding from government and development partners to enable implementation of the National Action Plan for Rural Water Supply, Sanitation and Hygiene, and develop a detailed financing strategy	MOH
Introduce mechanisms for the consolidated monitoring of sub-sector funding from multiple sources, both government and external	MOF/MPI together with MPWT and MOH

Investment Planning

Of the four sub-sectors, urban water supply is currently the only one for which there is a sector investment plan (SIP). The current plan covers the period 2005-2020 and has been periodically updated, with the latest revision approved in 2013.²⁰ The SIP forms the basis for the water supply component of annual MPWT plans and also provides a framework for donor support to the sector. The new draft sets the order of priorities for new investments as firstly Vientiane Capital, then provincial capitals, followed by some 40 communities in small towns with populations of 3,000 or more and lastly about 30 communities in small towns with populations of 2,000 or more. A table of proposed projects and associated investments is included, however the funding source for most of these is yet to be identified and limited government funding is indicated at this stage.

Public financial commitments to urban water supply currently amount to more than 75% of the requirement to meet national sub-sector targets, but not enough to meet replacement costs. Apart from government and donor support, water utilities should in principle be able to access private sources of finance. So far very few have done so, however. The utilities are not yet operating on a commercial basis (the development of business plans has only recently begun) and as such would be regarded as a significant risk to potential lenders.

In the case of urban sanitation, current public financial commitments are estimated to be less than half of what is needed to meet the sub-sector targets used in the SDA calculation. Given that Vientiane and other large urban centers already have high coverage with on-site sanita-

²⁰ DHUP (2013a)

tion, and that access to sewerage is likely to remain low in the short to medium term, most of the costs relate to replacement of existing facilities and would be funded largely by households.

Turning to rural water supply and sanitation, the new Action Plan contains only an outline of investment requirements and urgently needs further work to develop it into a Sector Investment Plan. For now, public financial commitments are less than half of what is needed to meet national sub-sector targets. At the 2013 High Level Meeting of Sanitation and Water for All, the Lao PDR delegation announced that the government would commit US\$15 million to rural WASH and mobilize an additional US\$28 million from development partners to implement the Action Plan to 2015. Translation of this announcement into action has been slow. However, the 2014 Sanitation and Water for All meeting will reconfirm annual budget allocation from the Ministry of Health of 30% for rural water supply and sanitation, including creating a separated budget line in the national budget for rural water supply and sanitation.

Budget Transparency

As discussed in section 2 above, it is difficult to identify investments in water supply and sanitation from budget statements, even those at sub-national levels. The most recent Public Expenditure and Financial Accountability Review (PEFA) for Lao PDR (published in 2010 based on fiscal year 2008/09 data) gave low scores for both the extent of unreported government operations and for transparency of intergovernmental fiscal relations.

Some water supply utilities in Lao PDR make a profit before taxes (which includes minor capital repair and maintenance and interest on some project loans). The Vientiane Province Nam Papa, for example, made a profit in each of the years 2009-11 but payment of taxes to government put the utility in the red for 2011. In contrast, the Bolikamxay Province

Nam Papa reported a loss in each of those years. However, adding back the depreciation that is included in the profit and loss statements, the utilities appear to have had a positive cash flow. This means that any transfers from provincial budgets may not have been necessary; in any case specific transfers or operating subsidies are not identified in the available provincial budgets.

For rural water supply, Nam Saat budgets for the fiscal years 2009/10 through 2011/12 appear to include little or no capital investment because most domestic funding for rural water supply has been routed through provincial budgets or (it appears) through off-budget or special fund financing. Nam Saat does have a domestic capital budget allocation of some US\$0.2 million in 2012/13.

Utilization of Budgets

There are no bottlenecks in the spending of recurrent domestic budgets for urban water supply and the small government allocations for capital expenditure. For donor-funded projects, however, implementation delays are common and most loans take longer to complete than planned. Minimal domestic allocations are made for urban sanitation, either capital or recurrent, and donor funding is also very small and easy to spend.

The situation with rural water supply is a little different. Here budget releases are slow and Nam Saat capacity for project implementation is low at provincial and district levels. Furthermore, delays in the granting of government approval for international NGO projects can be a serious obstacle, preventing these agencies from spending available funds. Only recurrent government spending—which is essentially for staff and related operational costs—seems to be unproblematic. As a result there are no spending bottlenecks reported in relation to sanitation and hygiene promotion, for which little or no capital expenditure is involved.

²¹ World Bank 2010b. While scoring well (a 'B') on indicators such as budget execution and comprehensiveness of information, Lao PDR scored much lower ('D' or 'D+') on the indicators mentioned and on multi-year planning. Donor practices in reporting were mid-grade (C+) or below.

Budget Adequacy

It is clear from the graphs presented in section 2 that there are large deficits in investment requirements in all sub-sectors.

For rural water supply, based on information in the social sector PIP from the Ministry of Planning and Investment database, domestic expenditure may finance close to 13% of the estimated requirement.

Domestic funding for urban water supply is mostly dedicated to project management, which is not included in capital expenditures for the purposes of the SDA model. Some domestic resources for construction are included in the PIP for FY 2011/12, but they are negligible compared with anticipated capital requirements. Development partners have been willing to finance urban water supply in the near past and are anticipated to do so in the future.

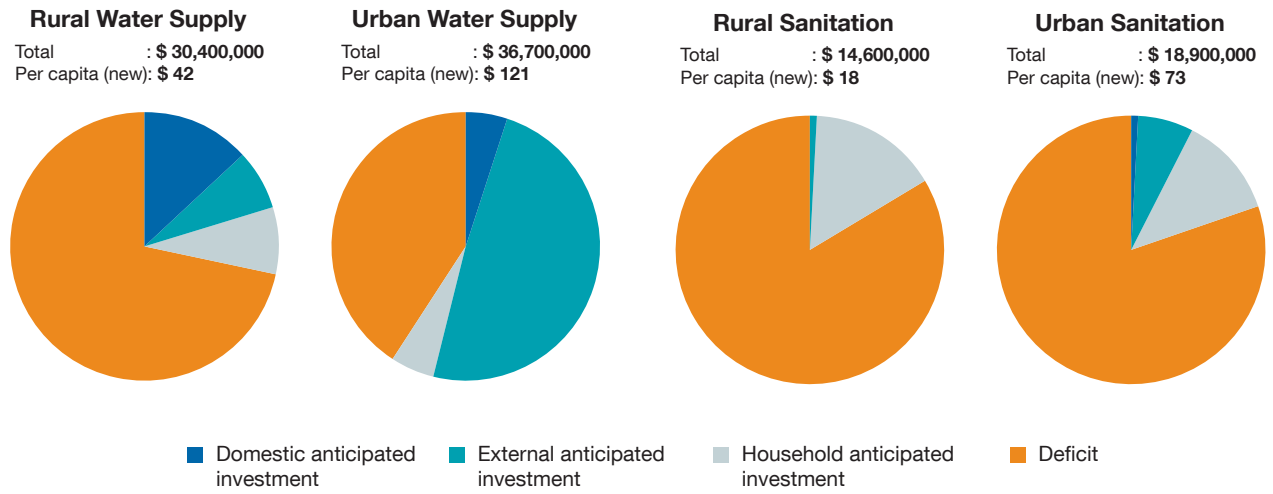
The vast majority of basic sanitation infrastructure (rural and urban) in Lao PDR is on-site and financed by households. Substantial support is available from NGOs and donors for community-level promotion to accelerate household investments. Nam Saat operational budgets at district level are not sufficient, however, to enable district staff to participate fully in sanitation or water supply initiatives at community

level. Nam Saat central receives less than 1% of the Ministry of Health's total budget, and under 5% of its administrative budget.²²

Figure 5.1 shows the different sources of finance for the four sub-sectors. It is clear from this that anticipated investments fall far short of the requirement to meet national targets, with substantial deficits (shown in orange) occurring for all four. Rural and urban water supply are both expected to receive some domestic capital funding, but there is little evidence that domestic sources will be available for urban and rural sanitation, although the Department of Hygiene and Health Promotion/Nam Saat hopes to secure larger budgets for rural sanitation over the next few years. Government expenditure on promotional activities will be essential in order to stimulate increased household investments in rural sanitation. This would be non-capital expenditure and is therefore not reflected in the pie charts. In the case of urban sanitation, coverage with on-site facilities is already high, government has historically spent very little in this area and only modest investments are planned in the period up to 2020. Again, though, some level of government expenditure on promotional and regulatory activities may be required in order to encourage households to replace household facilities where necessary and to improve fecal sludge management.

²² Giltner et al (2010)

Figure 5.1 Overall Annual Investment requirements, including anticipated financing by source



6. Sector Monitoring and Evaluation

Priority Actions for Sector Monitoring and Evaluation

Action	Lead responsibility
Establish a system of joint annual sector reviews (urban and rural) focusing on key indicators that track progress towards sector goals; equity in the allocation of sector funding; the quality and functionality of facilities and services; and the effectiveness of implementation processes	MOH, MPWT
Improve the quality and reliability of utility performance monitoring by the regulator WASRO	DHUP-WASRO
Strengthen the rural WASH monitoring framework, with greater emphasis on the functionality and use of facilities	Department of Hygiene and Health Promotion, MOH

At present, the sector monitoring framework is incomplete, much of the available data are unreliable and there is no focal point of reference for information on the status of the water supply and sanitation sector overall.

In the case of urban water supply, each provincial utility produces an annual report and submits it to WASRO, which produces a national summary report. Though this is useful, there are widely acknowledged misgivings about the reliability of the data submitted, which is not subject to third party verification, and WSRC/WASRO acknowledge that service providers do not fully understand the reporting requirements. The quality of data analysis and interpretation at national level is also a concern and WASRO reports of declining access to house connections in the last few years must therefore be treated with caution. It is also important to note that published data relate only to the population living within utility catchment areas, not to urban populations as whole. JMP data, which are based on national household surveys as well

as reports from DHUP, show a clear trend of increasing access to piped services in urban areas.

WASRO is currently developing five performance guidelines and two standard service agreements to improve the monitoring and regulation of water utilities. Service agreements between the Provincial Governor and service provider are already being introduced progressively across the country, their function being to clarify the responsibilities of both parties, define tariffs and set out key performance indicators that will form the basis of annual monitoring reports to WASRO.

There is currently no monitoring system in place for urban sanitation. JMP reports indicate that national and MDG targets for household facilities have already been met, but fecal sludge management is a neglected subject and no targets have yet been set for the collection and treatment of wastewater.

For rural water supply and sanitation, district Nam Saat offices produce annual monitoring reports that are consolidated at provincial and national level. Nam Saat then produces an annual report that includes, amongst other things, an estimate of water supply and sanitation coverage and compared this with previous years. A fundamental weakness of the reporting system is that it records what has been built, so far as this is known to Nam Saat, but not what is functional and used. As a result, government consistently reports rural water supply coverage figures which are higher than reported through JMP, since the latter is based on household surveys investigating the services people use.

The National Action Plan on Rural Water Supply, Sanitation and Hygiene, adopted in 2012, proposes a new and improved monitoring framework for rural WASH based on three streams of monitoring:

1. Progress against annual or multi-year plans of action
2. Monitoring for effectiveness
3. Process monitoring of strategy implementation

The Action Plan also identifies the range of parameters to be monitored, though it does not set specific benchmarks

for each; these are yet to be developed. Furthermore, it proposes that every year the rural WASH sector will review its performance against a set of 'Golden Indicators' designed to show whether coverage and the effectiveness of operational arrangements (not least for the management and maintenance of services) are improving. Progress will be recorded in an annual sector performance report, which will contribute to periodic national sector assessments for water and sanitation. The annual report will be presented and discussed at a joint annual sector review meeting attended by government and development partners, where it will be used for lesson learning and setting corrective actions.

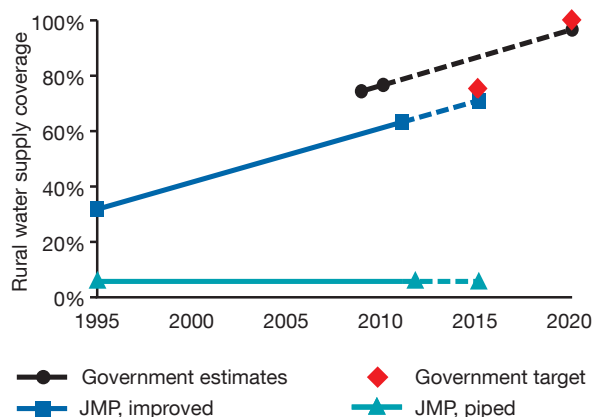
In the case of rural sanitation and hygiene, the new monitoring framework will need to encompass not only the construction of toilets but also the achievement of open defecation-free (ODF) status and the use of improved or unimproved toilets. Efforts are already underway to improve monitoring in the rural sub-sector, with UNICEF supporting the development of a National Water and Sanitation Information System (NaWaSIS). In the short term, national household surveys such as the biannual Lao Social Indicators Survey (LSIS) will continue to provide valuable information on levels of access to functional water supply and sanitation services.

7. Subsector: Rural Water Supply

Priority Actions for Rural Water Supply

Action	Lead responsibility
Identify funds for implementation of the National Action Plan for Rural Water Supply, Sanitation and Hygiene	MOH
Develop the capacity of Nam Saat to implement the National Action Plan for Rural Water Supply, Sanitation and Hygiene by increasing staffing at district level and providing customized technical and capacity building support	MOH, Development Partners, INGOs
Develop and test strategies to improve the sustainability of existing rural water supply schemes, for example by professionalizing management and strengthening technical support	Nam Saat, Development Partners, INGOs
Address inequalities by prioritizing investments and service delivery to underserved poor and remote communities	MOH, Development Partners, INGOs
Strengthen the rural WASH monitoring framework, with greater emphasis on the functionality and use of facilities	Department of Hygiene and Health Promotion, MOH

Figure 7.1 Rural water supply coverage and targets



Sources: SDA financial model; JMP (2013); GOL (2004); MOH (2012)

The 2004 National Growth and Poverty Eradication Strategy sets a target that, by 2020, 100% of the rural population should have access to improved drinking water sources. In order to do this, 250,000 persons per year will need to gain access to improved sources. This is about 2.5 times the number of people who gained access annually between 1995 and 2011.

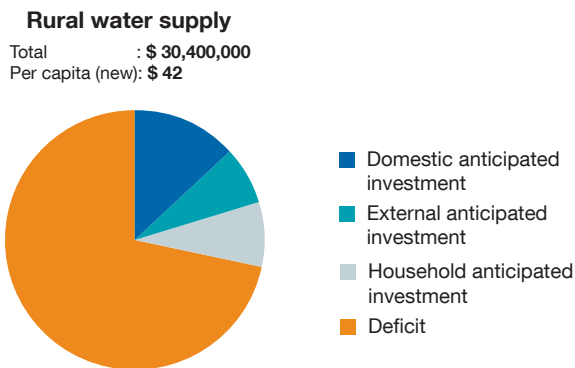
The SDA financial model estimates that in order for the target to be achieved, an annual expenditure of US\$30.47 million will be necessary: some US\$10.6 million for new investments and US\$19.8 million to replace new and existing stock. Assumptions are detailed in Annex 2.

In a departure from established sector funding arrangements, government has recently made special funds avail-

able for a number of rural community-based development schemes using revenue generated by the Nam Theun II Hydropower Project, which exports power to Thailand. It has been expected for some time that some of this funding will be allocated to Nam Saat for new water supply schemes, but at the time of writing it is not clear whether such funds will in fact be made available, and in what quantity.

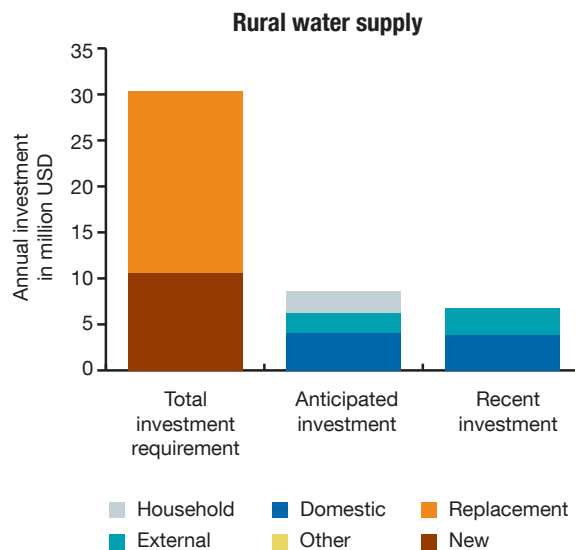
The existing estimates are based on contributions identified in the Project Investment Program for social sectors in FY 2012/13. It is not clear whether these are financed from on- or off-budget sources (and the allocation may be incorrect if some of the spending comes from special funds which receive contributions from both government and development partners). However, since it is the intention of government to improve on-budget accounting (see section 2), it is likely that a combination of Nam Theun II financing and clarity on financing sources will result in domestic funding for rural water supply of at least the level indicated in SDA estimates.

Figure 7.2 Rural water supply investment



Source: SDA Estimates

Figure 7.3 Rural water supply financing: required, anticipated (2012-2014) and recent funding (2009-2011)



Source: SDA Estimates

The Ministry of Health rarely allocates significant funding to the development or rehabilitation of rural water supply schemes and Nam Saat has yet to oversee a substantial rural water supply investment program. Instead, there is heavy reliance on donor funding, via projects led by NGOs, UNICEF and other multilateral or bilateral agencies. It appears that self-supply by households and communities has also made a very significant contribution (perhaps as much as 42%) to the increase in access achieved in recent years,²³ though this form of supply has not received much attention from government to development agencies to date. More information is needed on the extent and effectiveness of this form of supply, with a view to developing supportive strategies to exploit its full potential.

Nam Saat normally plays an active role in externally-funded rural water supply projects, but staff have limited technical expertise in water supply, and typically just one (sometimes two) officers are deployed per district. This significantly constrains the amount of work that Nam Saat can undertake at community level. Partnerships with NGOs, mass organizations or other development agencies offering additional human resources are therefore valuable to the sector.

The National Action Plan adopted in 2012 proposes that government, development partners and the private sector will prioritize support to remote areas (without road access) and to the poor, and will develop and scale up measures to achieve a more equitable situation within its five-year period. To this end it proposes that 40-50% of funding for new investments should be earmarked for the remote rural poor. The unit costs as well as the technical and operational challenges of reaching the un-served population may be higher than for those served to date, hence a considerable commitment of funds and effort will be needed to reach national targets.

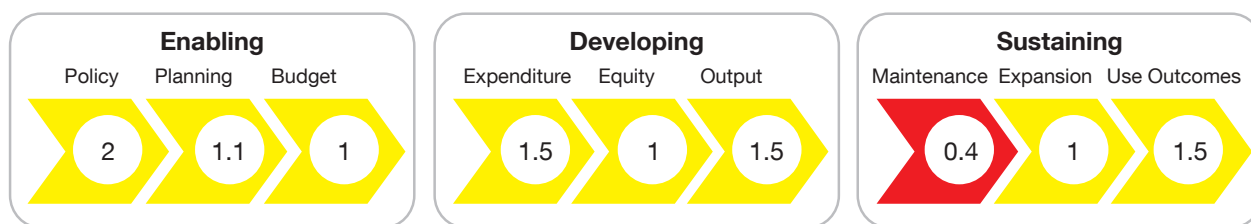
Studies conducted for the formulation of the action plan confirmed widespread anecdotal reports of a lack of sustainability in the improvement of rural water supplies. Water point functionality is not routinely monitored hence accurate data are not available, but some reports have estimated that up to half of all rural water supply facilities may be non-operational. Responsibility for the op-

eration and maintenance of all non-piped water supply schemes lies with the users, but global experience shows that community management is rarely effective unless there is backup technical and motivational support from government at the local level, and ready access to spare parts and skilled technicians. Again, achieving this at scale will require a concerted effort—and the deployment of increased human and financial resources—from Nam Saat and development agencies.

The National Action Plan could, if funded and implemented, do much to address the challenges outlined above and so accelerate progress both in terms of access to improved water sources and the sustainability of supply. Amongst other things, the plan establishes priorities for action by both government and development partners; sets out a framework for improved government-donor coordination at strategic and operational levels, including the coordination of funding sources; and defines key components of a comprehensive sector monitoring system.

The scorecard results show a medium score for all aspects of the enabling and developing pillars, reflecting the fact that, while various policy, institutional and financial measures have been proposed, they are not yet fully operational, and funding for the National Action Plan has yet to be identified. The one red score is for maintenance within the sustainability pillar. This indicates that scheme functionality (and hence management arrangements and technical support) needs much greater attention in sector work plans.

Figure 7.4 Rural water supply scorecard



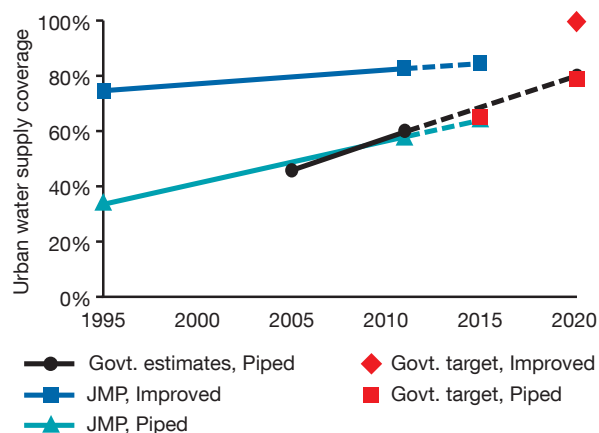
²³ MOH (2012b)

8. Subsector: Urban Water Supply

Priority Actions for Urban Water Supply

Action	Lead responsibility
Create a more enabling environment—for example, by providing government guarantees—so that utilities can access private sector finance	DHUP
Develop the capacity of utility staff, including support to the formulation and implementation of business plans	DHUP
Create incentives and obligations for water utilities to improve service provision by increasing their operational and financial autonomy; strengthening regulation and monitoring (including the use of performance contracts); and allowing tariffs to reach commercially viable levels	MPWT-DHUP
Invest in capacity building of utility staff including support to the formulation and implementation of business plans	DHUP, Nam Papas/Development Partners
Improve the quality and reliability of utility performance monitoring by the regulator WASRO	DHUP-WASRO

Figure 8.1 Urban water supply coverage and targets



Sources: SDA financial model. JMP (2013); GOL (2004), GOL NSEDP7 (2015 target); MOH (2012)

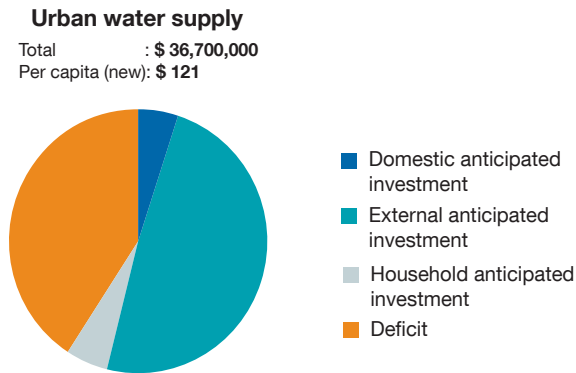
JMP data for urban water supply are encouraging. Latest data²⁴ show that by 2011 the MDG water target had been met, with 83% access to improved supplies in urban areas, and 58% with house connections.

Notwithstanding these achievements, service providers have struggled to cope with rapid urban growth in recent years and access has increased only slightly, as indicated in Figure 10. Furthermore, service quality often fails to meet government standards and it is not uncommon for households to receive non-potable water for only a few hours a day at low pressure. Many households living in Vientiane and secondary cities have invested in wells and individual water tanks to cope with intermittent supply and low water pressure.²⁵

²⁴ JMP (2013)

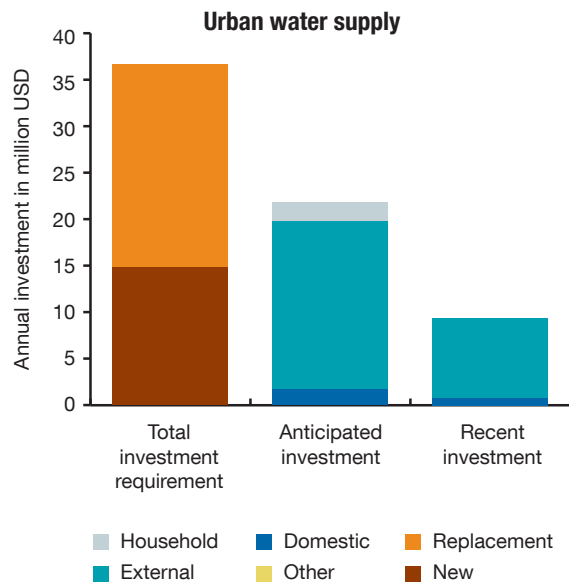
²⁵ World Bank (2010a)

Figure 8.2 Urban water supply investment



Source: SDA Estimates.

Figure 8.3 Urban water supply financing: required, anticipated (2012-2014) and recent funding (2009-2011)



Source: SDA Estimates; see Annex 2 for further details.

Apart from improving service quality and reliability, investment is needed to expand the coverage of urban water supply services. World Bank (2010) reported that in 2008, provincial water utilities served 69% of the population within their service areas, which were confined to urban centers, but only 12% when compared to provincial populations. In Vientiane, the utility provided piped water to 80% of its service area but this covered only half of the city—in other words, just 40% of the entire city had access to the public network. A further challenge is that access to piped water supplies is much lower in small and emerging towns than in Vientiane and other urban centers. According to WASRO data in 2012, 89 out of 147 urban centers have no piped water supply network. Both the small-scale water supply project MIREP and the ADB Small Towns Project have focused on improving services in under-served urban areas, and this will continue to be a priority.

Investment in the sector is currently guided by the Water Sector Investment Plan, which was revised in 2013 and covers the period up to 2020. The SIP sets out a rational and systematic approach to urban water supply development in the country, balancing continued investment in the capital and other established urban centers with new investment in under-served small towns and other urban areas.²⁶

In order to meet the NGPES target that 100% of the urban population should have access to improved drinking water sources by 2020, an annual expenditure of US\$36.7 million will be necessary: some US\$15.0 million for new investments and US\$21.7 million to replace new and existing stock. Some 124,000 persons will require access annually to meet this target, about twice as many per year as in the period 1995-2011.

Recent investments have come from several large projects funded by external sources, notably the Asian Development Bank (ADB), Korea (KOICA), UN-HABITAT and Thailand

²⁶ ADB (2012)

(NEDA). A large project (estimated at over US\$80 million in total) financed by China, has also been announced for Vientiane, which is currently experiencing water supply shortages due to limited capacity and an increasing population.²⁷ External assistance has accounted for more than 90% of sector funding in recent years²⁸ but it is uncertain whether such levels of support can be sustained in future. Government will therefore need to mobilize additional resources if the investment requirements to 2020 are to be met. It should also be noted that there is a growing trend for external assistance to be provided not as grants but through loans administered via the provincial government. In addition, significant external financing may in future come from private companies investing in water supply utilities.²⁹

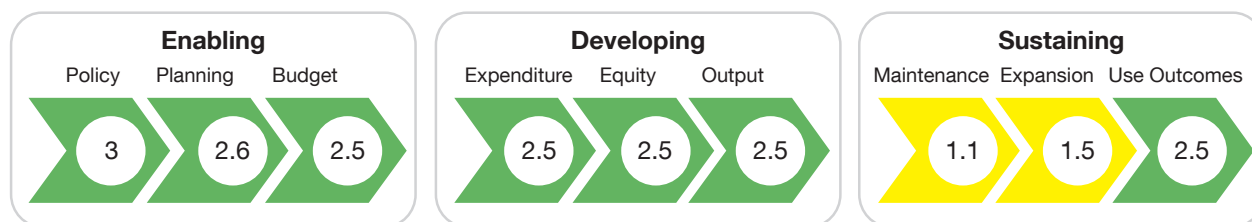
Domestic expenditures detailed in Project Investment Program³⁰ information for the Ministry of Public Works and Transport indicate that domestic contributions for the 2011/12 budget year are for project management only, though there are indications of construction expenditures for projects in Nguen district in Sayaboury province and for pipeline construction and rehabilitation in Savanh. Project management is not included as a capital expenditure in the SDA financial model, therefore the charts below do not show significant domestic anticipated investment. Household investments are assumed to be in technologies such as tubewells/boreholes or protected dug wells, which will, it is estimated, supply 30% of the urban population by 2020. The revised SIP indicates that 7 projects in Saravane province with a total value of US\$7.3 million will be completed by 2015 and funded by the Government of Lao PDR. As-

suming that 70% of the project expenditures will be for capital works and that they will take 3 years to complete, an indication of at least US\$1.7 million in domestic capital expenditure was included in the SDA calculations for urban water supply.

Since utilities receive no direct operating subsidies from provincial government, they are heavily dependent on revenue generation to fund service delivery and maintenance. The draft Strategic Framework for the Development of the Urban Water Supply and Sanitation Sector 2013-2030 reports that almost all utilities are likely to achieve full cost recovery by 2015, though there are imbalances to be addressed in tariff levels, which are now considerably higher in many provinces than in the capital. These improvements in revenue generation are encouraging, though regulation is not yet effective in creating strong incentives to improve operational performance, for example by reducing non-revenue water or the quality or reliability of supply. Full cost recovery remains a very ambitious goal for many of the utilities.

A summary of the scorecard results for urban water supply is provided below. These reflect a generally positive report from sector stakeholders. Certainly this sub-sector has a more defined policy and institutional framework than the others, and as a result has managed to attract substantial funding. Nevertheless the yellow scores for maintenance and expansion highlight the need for more effective regulation to ensure full cost recovery, and for funding sources to be identified for SIP implementation.

Figure 8.4 Urban water supply scorecard



²⁷ Radio Free Asia (2013)

²⁸ World Bank (2010a)

²⁹ The Lao-Malaysian consortium DKLS is already investing in the Savanakheth water utility

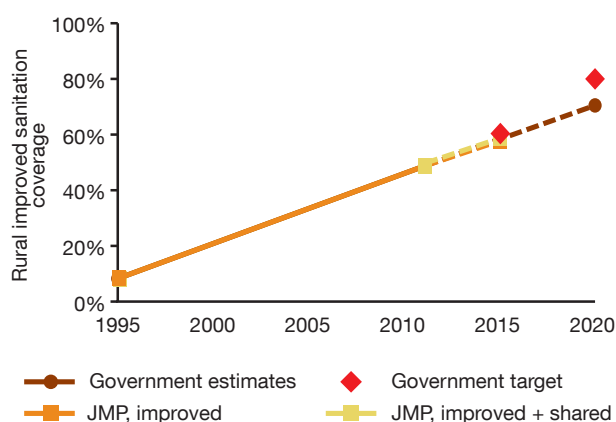
³⁰ A Project Investment Program is a list of priority projects drawn in conjunction with every Five Year Plan (NSEDPP). The extent to which these are included in government budgets is then negotiated annually.

9. Subsector: Rural Sanitation and Hygiene

Priority Actions for Rural Sanitation and Hygiene

Action	Lead responsibility
Develop a national rural sanitation and hygiene program based on tested operational approaches, with clear guidelines, a financing strategy and monitoring framework	Nam Saat
Urgently increase Nam Saat operational funding and district-level staffing to enable sanitation and hygiene promotion at scale	MOH, Development Partners, INGOs
Improve access to affordable and desirable latrines by encouraging private sector involvement in developing the sanitation market	Nam Saat, Development Partners, INGOs
Develop mechanisms and incentives to better reach poor and remote under-served communities	MOH
Strengthen the rural WASH monitoring framework, with greater emphasis on the functionality and use of facilities	Department of Hygiene and Health Promotion, MOH

Figure 9.1 Rural sanitation coverage and targets



Sources: SDA financial model. JMP (2013) Progress on Drinking Water and Sanitation: 2013 Update. UNICEF and WHO. 2015 target from RWSS Action Plan. Targets agreed by national experts for the purposes of SDA

For the purposes of the SDA analysis, stakeholders adopted the National Action Plan target that 80% of the rural population should have access to improved sanitation by 2020. In order to achieve this, an annual expenditure of US\$14.6 million will be necessary: some US\$3.9 million for new investments and US\$10.8 million to replace new and existing facilities. Assumptions are detailed in Annex 2.

To reach the target, about 209,000 persons should gain access annually to improved sanitation until 2020; this is almost 80% more each year than received access in the period 1995-2011 (approximately 117,000 persons per year received access during those years).

Estimates of recent expenditure in Figure 15 below are understated because it is difficult to document year-on-year

household expenditure for on-site sanitation. Households are increasingly the sole source of financing for rural sanitation infrastructure, with some level of local subsidy for poor households or for construction materials. The extent of such subsidies could not be determined, but to account for any subsidies, the SDA model assumes that 10% of the cost of pour-flush toilets draining to a pit or tank would be met by non-household sources.

Much of the investment in domestic facilities has been initiated and funded by householders themselves because, until recently, most promotional projects by government and development agencies were short term and on a fairly small scale. Such projects tended to promote relatively expensive toilet designs and to rely heavily on the use of hardware subsidies as an incentive for toilet construction. The National Action Plan indicates that in future, hardware subsidies should be provided only for the poorest and most remote communities, following the successful piloting of Community-Led Total Sanitation (CLTS) in recent years.

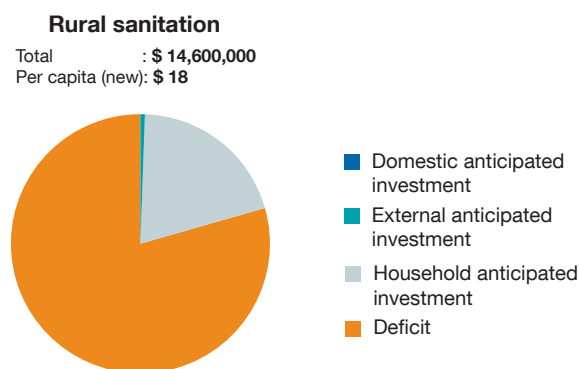
Since households will continue to be the predominant source of capital financing, the deficit indicated in Figure 9.2 is in fact a deficit in household financing. Even the anticipated household investments might not, in practice, materialize - especially if government and development partners devote insufficient resources to sanitation promotion and supply side development and so fail to elicit household investments.

The sanitation component of the National Action Plan envisages a substantial scaling up of sanitation and hygiene promotion, with the bulk of the funding needs arising from the costs of promotion and marketing. As with rural water supply, poor and remote communities are prioritized for support but implementation of the plan depends on Department of Hygiene and Health Promotion together with the provincial departments developing a detailed sector invest-

ment plan, based on the outline provided in the Action Plan, and securing funding from government and development partners.

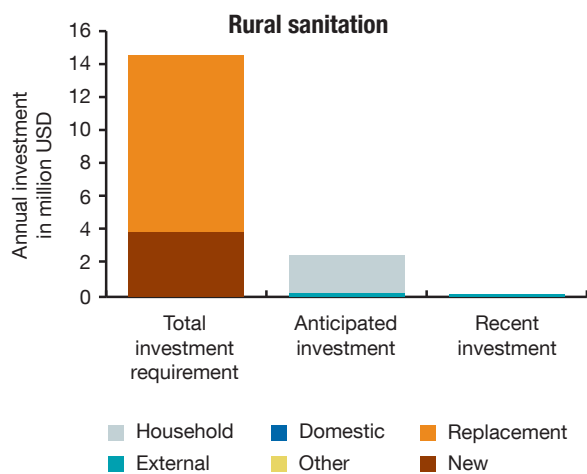
The case for devoting increased human and financial resources to sanitation and hygiene promotion has been strengthened by recent evidence highlighting the impact of poor sanitation on nutrition. There is a high level of stunting in the Lao PDR, particularly in rural areas, and improvements in sanitation and hygiene promotion should be integral to strategies for improving child nutrition. It is encouraging to note, therefore, that the Government of Lao PDR and its development partners are in the process of developing a Multi-sectoral Food and Nutrition Security Action plan 2014-2020. Recommendations published in December 2013 indicate that the strategy will include interventions from the agriculture, education, health and WASH sectors. The latter would encompass improvements in rural water supplies; sanitation and hygiene promotion using CLTS and CATS; and improvements in household water treatment and storage. The report indicates that some US\$2 million dollars are available for this out of a total requirement of US\$6.7 million, though the origin of these figures is not clear.

Figure 9.2 Rural sanitation investment



Source: SDA Estimates

Figure 9.3 Rural sanitation financing: required, anticipated (2012-2014) and recent funding (2009-2011)



Source: SDA Estimates

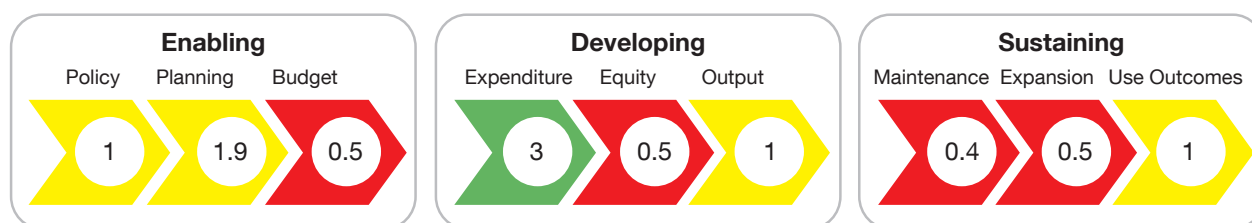
A number of projects designed to facilitate sanitation promotion across entire districts are currently underway. They combine the use of CLTS and sanitation marketing and involve partnerships between government (Nam Saat), NGOs and private sector suppliers of goods and services. Key support agencies include WSP, SNV and Plan International and activity is currently focused on four provinces but set

to expand in the near future. A key challenge is to identify affordable and desirable sanitation options that are accessible and affordable even to remote rural communities.

Further groundwork for a national scaling up program has been completed at national level including the establishment of a team of CLTS resource persons with the capacity to train and mentor government, NGO or community workers as the program spreads to new districts and provinces. Implementation guidelines for a programmatic approach are under development. Groundwork for strengthening behavior change communication has also started as a sector-wide initiative.

In the enabling pillar of the scorecard shown below, the results show red for budgets, highlighting the low priority afforded to sanitation and hygiene promotion in funding allocations both by government and development partners. Further along the service delivery pathway, the developing pillar shows red for equity, reflecting the absence of concrete plans to reach remote and poor communities and the lack of a clear financing strategy targeting poor and vulnerable households or incentivizing village-wide achievements. The sustaining pillar shows red both for markets and uptake, reflecting the need to improve access to affordable and aspirational toilets and to take sanitation and hygiene promotion to scale.

Figure 9.4 Rural sanitation scorecard



10. Subsector: Urban Sanitation and Hygiene

Priority Actions for Rural Sanitation and Hygiene

Action	Lead responsibility
Clarify institutional roles and responsibilities relating to the management of urban wastewater and on-site sanitation facilities	MPWT
Adopt a Wastewater Management Strategy and Investment Plan to complement the Urban Water Supply Strategy	DHUP, Development Partners
Identify funding for strategy implementation	MPWT
Develop and test operational approaches for improved fecal sludge management (including collection, transport, treatment and disposal)	DHUP, Development Partners, NGOs
Build capacity for implementation of the strategy	DHUP, Development Partners, NGOs

Access to improved sanitation is very high in urban centers - particularly the capital - and is entirely based on-site facilities. The management of fecal sludge is therefore a challenge and, as urban densities increase, the need for investments in primary infrastructure for the management of wastewater will increase.

A recent study³¹ found that while the great majority of households in the capital have a flush toilet, only a minority of these are connected to a septic tank; instead the majority of toilets discharge into a single leach pit. Construction quality varies greatly and in some parts of the city there is a significant risk of wastewater contaminating ground or surface water. When septic tanks or pits are full, people hire mostly private contractors for emptying, but it is not clear where most of the septage is dumped. Government has es-

tablished a disposal point at a municipal landfill site outside Vientiane, where tankers can discharge septic into a pond for a fee, though no treatment is available. However, government has not yet played a proactive role in promoting and enabling the regular emptying of septic tanks and pits, or in providing septage treatment facilities.

Outside of the capital, the ADB Small Towns Water Supply and Sanitation Project promotes the construction of household toilets (using the offer of free water connections as an incentive) but again this is based on the use of on-site sanitation, not sewerage.

To date there have not been any major investments in sewerage in Lao PDR and while one waste stabilization pond was established in Vientiane some years ago, this was fed

³¹ Baetings and O'Leary (2010)

³² CTI and IDEA (2011)

by an open drain and no sewerage network was developed. The pond is, in any case, no longer operational. The JICA-funded 'Water Environment Study' for Vientiane, issued in 2011,³² concluded that large scale investments in conventional sewerage would not be needed in the near future, but did recommend the gradual introduction of decentralized wastewater treatment systems (DEWATS) and MPWT has expressed 'in principle' support for this. A small number of DEWATS have already been piloted for institutional use with support from BORDA. Government is also taking some first steps towards the introduction of sewerage in selected locations and over the last few years MPWT – with support from ADB and AFD – has commissioned a small number of drainage and sewerage master plan studies, including ones for Savannakhet and Luang Prabang. A feasibility study for centralized sewerage in Savanakheth is now under preparation.

A Strategic Framework for the Water and Sanitation Sector 2013-2020 was recently adopted by MPWT under the umbrella of the National Urban Development Strategy. It contains only limited references to urban wastewater, but MPWT has indicated that a Wastewater Strategy and Investment Plan (WSIP) may be adopted in the near future.³³

In order for 100% of the urban population to have access to improved sanitation by 2020, 104,000 people per year need to gain access to improved sanitation, compared with 69,000 people who gained access per year in the period 1995-2011.

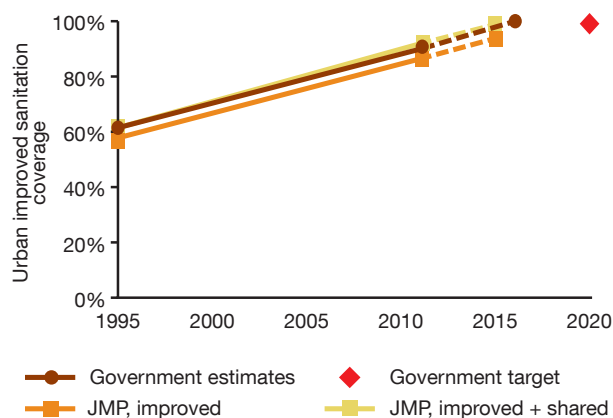
Although no formal target has been adopted for access to sewerage, a figure of 15% has been used for the purposes of the SDA analysis, given the developments outlined above.

Based on these targets and a 2010 level of access to improved sanitation of 83%,³⁴ the SDA financial model esti-

mates that an annual expenditure of US\$18.9 million will be necessary: US\$7.6 million for new investments and US\$10.2 million to replace new and existing stock, plus a further US\$1 million for investments in lagging treatment facilities. Assumptions are detailed in Annex 2, but it is important to note that the major cost drivers for urban sanitation investments are sewer connections, and replacement costs for existing facilities.

Figure 10.3 provides a representation of recent and anticipated expenditure on urban sanitation in comparison to investment requirements. Recent spending has been minimal, being largely confined to DEWATS pilots, and no evidence of anticipated domestic or external funding was found in national level budgets. However, information from the Department of Housing and Urban Planning in MPWT indicates that a US\$5 million grant under the ADB Greater Mekong Sub-Region Program has been earmarked for limited sewerage including a wastewater treatment plant over the next three years, and this has been factored into the analysis.

Figure 10.1 Urban sanitation coverage and targets

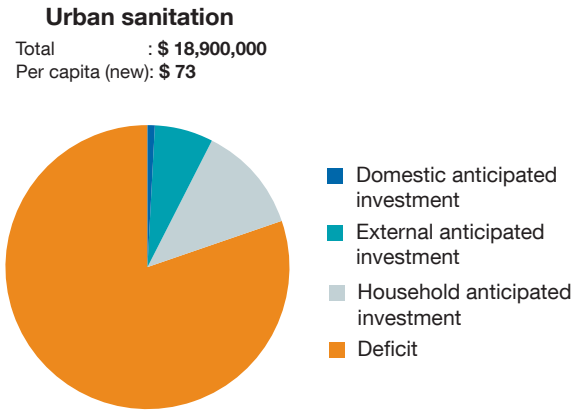


Sources: SDA financial model, JMP (2013), MOH and LSB (2012a)
Targets agreed by national experts for the purposes of SDA.

³³ Verbal communication during SDA workshop

³⁴ JMP (2012)

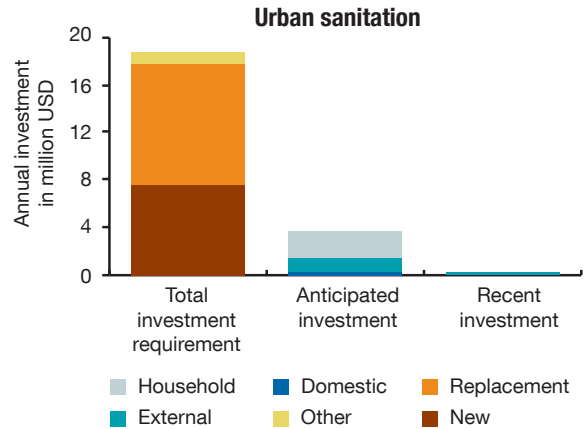
Figure 10.2 Urban sanitation investment



Sources: SDA financial model, JMP (2013) MOH and LSB (2012a)
 Targets agreed by national experts for the purposes of SDA

Turning to the scorecard, the red (zero) score for budgets in the enabling pillar reflects the fact that while urban households have invested in toilets, there has so far been very little public investment in wastewater collection and treatment or fecal sludge management. Another bottleneck is the lack of a comprehensive policy or strategy for urban sanitation that sets out priorities, targets and institutional arrangements. Further along the service delivery pathway, in the developing pillar, low scores mainly relate to the lack of interventions in the urban sanitation sector and the ab-

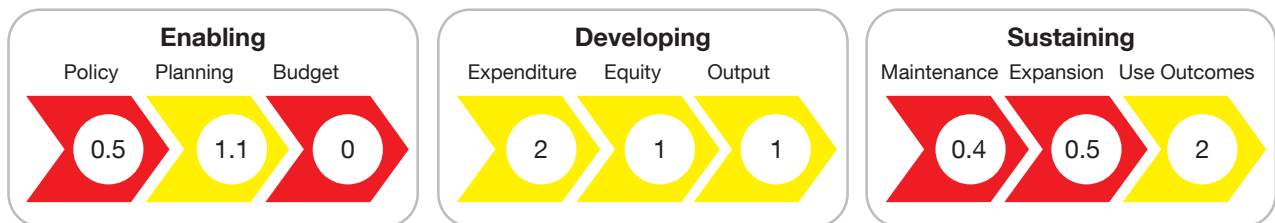
Figure 10.3 Urban sanitation financing: required, anticipated (2012-2014) and recent funding (2009-2011)



Source: SDA Estimates

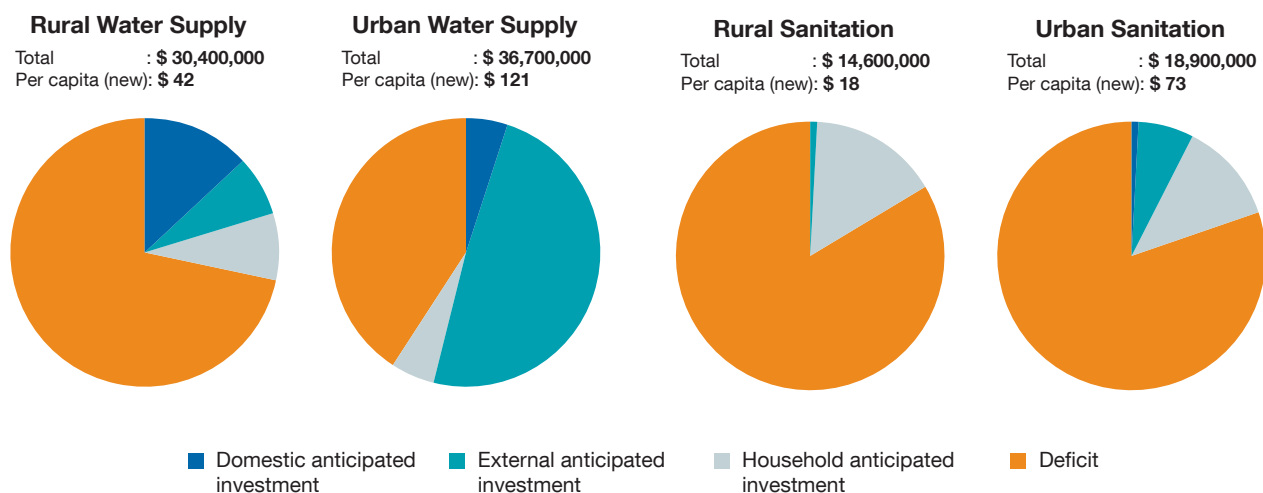
sence of a poor-inclusive focus. In the sustaining pillar, the red scores for maintenance and expansion result from a lack of government plans or budgets (so far) to increase the proportion of fecal waste that is safely collected and treated. User outcomes nevertheless have a fairly good score, due mainly to the fact that Lao PDR has managed to achieve high level of access to sanitation in urban areas via household investments in on-site facilities.

Figure 10.4 Urban sanitation scorecard



11. Conclusion

Figure 11.1 Overall Annual Investment requirements, including anticipated financing by source



With Lao PDR having met the water- and sanitation-related MDG targets, this analysis has focused on the challenge of meeting (national) targets set for 2020. These targets entail universal access for all sub-sectors, except for rural sanitation, where a 2020 target of 80% is used. Achieving these targets means that an estimated 374,000 people annually gaining access to improved water supplies and 313,000 annually to improved sanitation facilities. Out of those that need to gain access to achieve the targets, two thirds of the people – for both water supply and sanitation - are located in Lao PDR rural areas, where service delivery gaps and inequalities remain persistent. The 2011 Lao Social Indicators Survey (LSIS), for example, found that the use of improved drinking water sources stood at 66.5% in rural

areas with road access, but only 42% in rural areas without a road. Similarly, the use of improved sanitation facilities was 51.2% in rural areas with road access and just 22.6% in those without. Almost 100% of the richest quintile of the rural population are using improved sanitation facilities, however only 13% of the poorest do.³⁵

Combined with assumptions on technology mix, unit costs and household contributions, achieving the above targets translates to capital expenditure requirements for water supply and sanitation of US\$67.1 million and US\$33.5 million per year, respectively. Within these totals, a slightly larger proportion of the investment requirements is for urban areas rather than for rural, driven by higher unit cost per

³⁵ MOH (2012a)

capita in urban settings and higher levels of services. However, the projected expenditures of government and development for water supply are estimated to be only US\$26.1 million, of which over three quarters for urban water supply, and only US\$1.6 for sanitation, of which almost nothing for rural sanitation. This illustrates the bias towards urban investments and stepping up investments in rural water supply and sanitation remains a critical area for government and development partner action.

Assuming that all of the anticipated household contributions materialize, these findings imply capital expenditure deficits for water supply of US\$36.8 million and US\$30.3 million per year for sanitation, respectively. Apart from investment requirements, an estimated US\$12 million per year is required for the operation and maintenance of water supply and sanitation services, largely to be covered through user fees and contributions.

While increased funding is essential if the targets are to be met, there are other conditions, which also need to be in place if access to improved services is to be expanded and sustained. These are indicated across the scorecard as yellow - or worse - red buildings blocks, representing blockages in service delivery, while green indicates a driver for service delivery.

Rural water supply scores well on policy but not on planning and finance, reflecting the fact that a National Action Plan has been approved but is not yet funded, and that sub-sector planning and coordination are fragmented. Further challenges relate to low rates of access in poor and remote communities, and low scores on maintenance for rural areas as whole, reflecting high reported rates of non-functioning water points. Addressing these challenges will require not only an increase in the allocation of human and financial resources but also improved technical support

mechanisms for rural communities, viable operation and maintenance provisions and the development of more effective and professionalized management arrangements for rural water supply schemes.

The enabling pillar of the rural sanitation sub-sector scorecard reflects low budgets and the absence of policy and sector-wide planning mechanisms. Under the developing pillar, limited modest scores for equity and output reflect the lack of pro-poor operational strategies and the generally low level of activity in sanitation and hygiene promotion in most districts (which in itself allows fairly good expenditure as the amounts allocated are tiny). Under the sustaining pillar, low scores on market and uptake indicate that demand generation for, and private sector provision of, sanitation goods and services are both under-developed and that such “software” interventions will require much more financial and human resources to reach those unserved.

Only urban water supply shows a good score for the three elements of policy, planning and budgets within the enabling pillar. This reflects the fact that the policy and institutional framework is well established for this sub-sector and a sector investment plan is in place. This foundation combined with fund mobilization means that further along the service delivery pathway, urban water supply again scores well on developing new services. There are bottlenecks, however, under the sustaining pillar, both in terms of expansion to underserved areas including provincial capitals, smaller towns and ‘urban’ districts, and in ensuring cost recovery, maintenance and quality of services through effective regulation.

This situation is in marked contrast to urban sanitation, which scores poorly across the enabling, developing and sustaining pillars, especially in light of more public policy goals beyond on-site access, which already is high in Lao PDR. The scorecard thus reflects the fact that the urban

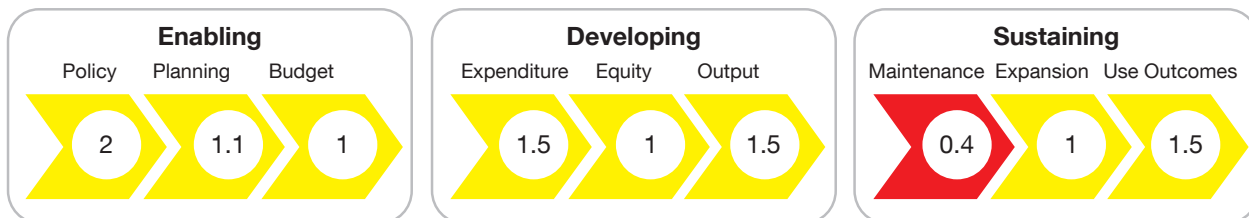
sanitation sub-sector is still developing. So far there has not been large scale investment in wastewater collection and treatment while the management of on-site services on which most people depend, in particular fecal sludge management, has not yet received much attention from government. This may change, however, if a Wastewater Strategy and Investment Plan is developed.

Key actions for the sector to resolve the challenges highlighted by this Service Delivery Assessment are to:

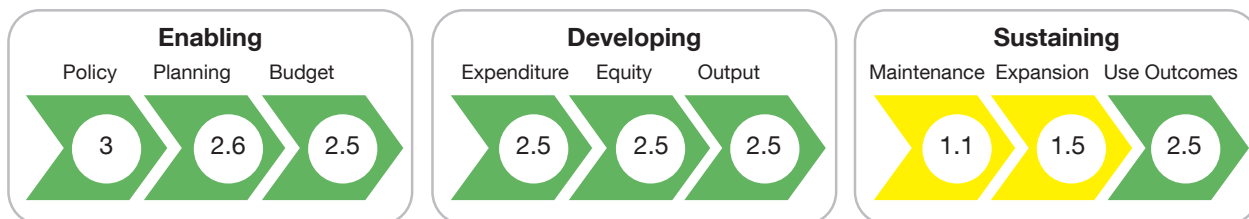
- Implement the National Rural Water Supply, Sanitation and Hygiene Action Plan, since funding gaps and inequalities in access are most profound in these sub-sectors, especially in remote and ethnic areas.
- Develop an overarching policy on WASH for both urban and rural areas, including creating a separate budget line for WASH in the national budget.
- Develop a national capacity building program to improve district-level operational resources and capabilities for rural water supply and sanitation service delivery.
- Improve regulatory environment, financial autonomy and investment climate for water utilities, so as to encourage increased private sector involvement, expansion and sustainability of service delivery.
- Improve financial monitoring mechanisms so that government and donor expenditure in each sub-sector can be reported effectively at national and sub-national level.
- Strengthen sector monitoring and government-donor coordination through the establishment of a system of Joint Annual Sector Reviews (urban and rural), focusing on key indicators relating to sector goals; equity in the allocation of sector funding; the effectiveness of implementation processes; and the quality, functionality and use of facilities and services.

Figure 11.1 Subsector scorecards

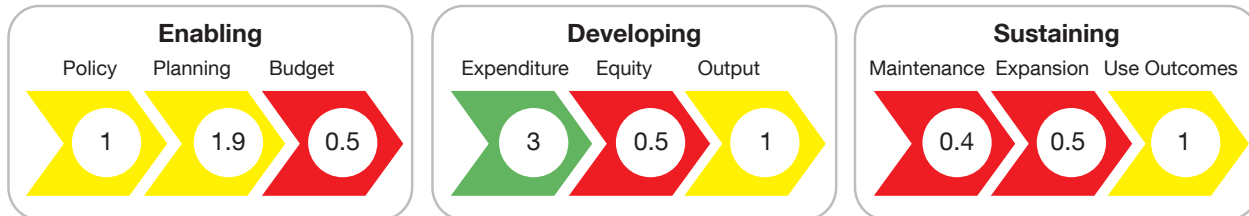
RURAL WATER SUPPLY



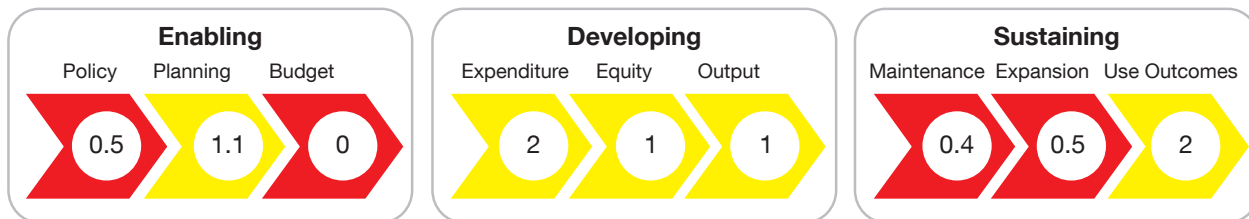
URBAN WATER SUPPLY



RURAL SANITATION AND HYGIENE



URBAN SANITATION AND HYGIENE



Annexes

Annex 1: Scorecard and Explanation

Building block	Areas of evidence for assessment	Question	High (1)	Medium (0.5)	Low (0)	Score	Explanation for score	Source of evidence
RURAL SANITATION								
ENABLING								
Policy	Sector targets	Are there RSH access targets, for households and/ or communities, in the national level development plan?	Targets for rural household access and communities becoming ODF in the development plan	Targets for rural household access in the development plan	No rural sanitation targets in the development plan	0	NSEDP has an overall sanitation target, not specifically for rural sanitation: 60% access by 2015 (NSEDP)	NSEDP
Policy	Sector policy	Is there a rural sanitation policy that is agreed by stakeholders, approved by government, and publically available?	Policy officially approved and publically available	Policy drafted and agreed but not officially approved	No policy	0	Currently there is no policy, only draft RWSS Strategy and approved National Action Plan in Sept 2012	(1) NSDEP, (2) National Action Plan for Rural Water Supply and Sanitation, (3) NGPES, (4) National Health Plan
Policy	Institutional roles	Are the institutional roles of rural sanitation sub-sector players (national/state and local government, service provider, regulator etc) clearly defined and operationalized?	Defined and operationalized	Defined but not operationalized	Not defined	1	Nam Saat Central has a mandate to guide the rural WASH sub-sector. So roles are well defined, though there has been debate around the future role of Nam Saat in relation to rural water supply schemes.	(1) Decree 37 in 1999 - roles/ responsibilities of Nam Saat; (2) Latest Decree 2012? (3) 1982 Decree on the establishment of Nam Saat
Planning	Fund flow coordination	Does government have a process for co-ordinating multiple investments in the sub-sector (domestic or donor, e.g. national grants, state budgets, donor loans and grants etc.)?	Coordination process defined and operationalized	Coordination process defined but not operationalized	Not defined/ no process	0.5	National Plan of Action includes funding requirements but no financing strategy. Also proposes improved co-ordination including Joint Annual Sector Reviews	(1) National Action Plan, (2) Sector Financing Study (WSP) (3) Sector Review (World Bank)
Planning	Investment plan	Is there a medium-term investment plan for rural water based on national targets that is costed, prioritizes investment needs, and is published and used?	Investment plan based on priority needs exists, is published and used	Exists but not used, or under preparation	Does not exist	0.5	Outline investment plan in draft RWSS strategy, but funds not committed by govt and donors. No financing strategy.	(1) National Action Plan, (2) NSEDP / NGPES, (3) National Health Plan

Building block	Areas of evidence for assessment	Question	High (1)	Medium (0.5)	Low (0)	Score	Explanation for score	Source of evidence
Planning	Annual review	Is there an annual multi-stakeholder review in place to monitor sub-sector performance, to review progress and set corrective actions?	Review of performance and setting of corrective actions implemented	Review of performance but no corrective actions implemented	No review or setting of corrective actions	0.5	There is an annual round table meeting for the sub-sector, and a MCH Technical Sub-Working Group under the Dept of Hygiene which looks at WASH issues. Draft strategy proposes a RWSS annual sector review using 'golden indicators' for the sector.	(1) National Action Plan, (2) World Bank Water Sector Review (2010), (3) Annual Nam Saat report
Planning	HR capacity	Has an assessment been undertaken of the human resource needs in the sub-sector to meet the sub-sector target and is the action plan being implemented?	Assessment undertaken and actions being implemented	Assessment undertaken but no action being taken	No assessment undertaken	0	Some project-based assessments done but not a comprehensive one for the whole sub-sector. Training has been given to Nam Saat staff as per recommendations but no systematic follow-up. HR strategy for health staff has been done; but not detailed for sanitation.	(1) SIDA HR Development Plan 2002, (2) SNV-WA capacity gap assessment 2012, (3) WASH Dip Study 2012 -- WSP, (4) National Action Plan, (5) HR strategy for health staff upto 2020
Budget	Adequacy (of financing)	Are the public financial commitments to the rural sanitation sub-sector sufficient to meet the national targets for the sub-sector?	More than 75% of what is needed	Between 50-75% of needs	Less than 50% of needs	0	National Action Plan assumes much higher investment (subsidy) by government. Software budget for demand generation and recurrent cost insufficient to stimulate household investment.	(1) National Action Plan, (2) National Health Plan
Budget	Structure	Does the budget structure permit investments and subsidies (operational costs, administration, debt service, etc) for the rural sanitation sector to be clearly identified?	Yes for investment and for subsidies	Yes for investment but not subsidies	No	0.5	Government budgets are only for Nam Saat routine operational costs, nothing for hardware subsidies or special promotional campaigns.	(1) WSP Sanitation/Hygiene Financing Study, (2) National Action Plan / Community Dialogue Manual (all concerned parties' contribution defined)
Budget	Comprehensive	Does the government budget comprehensively cover domestic and official donor investment/subsidy to rural sanitation?	More than 75% of funds to sub-sector on budget	Less than 50% of funds to sub-sector on budget	Less than 50% of funds to sub-sector on budget	0	WSP Financing Study found that most sub-sector spending is by development partners and NGOs. NGOs are the main contributor and support is mostly off budget.	(1) WSP Sanitation/Hygiene Financing Study
DEVELOPING								
Expenditure	Utilization of domestic funds	What percentage of domestic funds budgeted for rural sanitation are spent (3 year average)?	Over 75%	Between 50% and 75%	Less than 50%	1	Government expenditure is nearly all recurrent – nothing for hardware budget hence no bottlenecks in spending.	(1) WSP Sanitation/Hygiene Financing Study
Expenditure	Utilization of external funds	What percentage of external funds budgeted for rural sanitation are spent (3 year average)?	Over 75%	Between 50% and 75%	Less than 50%	1	UNICEF rural sanitation has 87% execution ratio; NGO spending is controlled through project processes. No major bottlenecks.	(1) WSP Sanitation/Hygiene Financing Study, (2) National Action Plan

Building block	Areas of evidence for assessment	Question	High (1)	Medium (0.5)	Low (0)	Score	Explanation for score	Source of evidence
Expenditure	Reporting	Is rural sanitation expenditure versus budget audited and reported on in a consolidated format for all sources of domestic and official donor expenditure?	Yes for domestic and donor expenditure	Yes for domestic expenditure	No	1	The audit carried out by the central inspection on the domestic and external funds.	Inspection/Audit Dept. of MOH
Equity	Local participation	Are there clearly defined procedures for informing, consulting with and supporting local participation in planning, budgeting and implementing for rural sanitation developments?	Yes and systematically applied	Yes, but not systematically applied	No	0.5	Processes for community dialogue have been adopted but need updating to accommodate new RWSS strategy. CLTS essentially is a local empowerment process; however scale of CLTS still small	(1) National Action Plan, (2) Community Dialogue Manual
Equity	Budget allocation criteria	Have criteria (or a formula) been determined to allocate rural sanitation funding equitably across rural communities and is it being applied consistently?	Yes, applied consistently	Yes, but not applied consistently	No	0	Govt has a list of most needy areas but no specific criteria for allocating funds according to need	(1) NGPES, (2) National Health Plan
Equity	Reducing inequality	Is there any (periodic) analysis carried out to assess disparities in access and are measures (policy or programmatic actions) to reduce inequalities taken as a result?	Yes (periodic) analysis undertaken and acted upon	Yes (periodic) analysis undertaken but not acted upon	No	0	JMP/GLAAS workshop organised with concerned stakeholders, including equity analysis. However, no coherent policy to support poor households has been formulated	(1) National Action Plan (2) JMP/LSIS
Output	Quantity	Is the annual expansion of rural households gaining access to safe sanitation sufficient to meet the sub-sector targets?	Over 75% of that needed to reach sector targets	Between 75% and 50% of that needed to achieve targets	Less than 50% of that needed to reach targets	0.5	JMP shows rural access of 48% (2011). At 2.8% annual growth progress is on track to meet the 2015 national target of 60%, however 2020 NAP target is not on track	(1) Nam Saat monitoring report (2) JMP 2013 update (3) LSIS 2012
Output	Capacity for promotio	Is there enough capacity - staff, expertise, tools, materials - to deliver a sanitation programme at scale, using tailored community-based approaches?	Yes, capacity exists and approaches are being used at scale	Gaps in capacity but approaches generally being used at scale	Deficits in capacity and no community-based approaches at scale	0.5	Few staff at district level (1-2 per district), plus limited knowledge and capacity; evidence-based tools for behaviour change still need to be developed	(1) National Action Plan (2) WASH Diploma Study (WSP)
Output	Reporting	Does the government regularly monitor and report on progress and quality of rural sanitation access, including settlement-wide sanitation, and disseminate the results?	Quality, quantity and disseminated	Quality or quantity	Neither	0	No budget for monitoring/supervision, no monitoring guidelines	National Action Plan
Sustaining								
Markets	Supply-chain	Does the supply-chain for sanitation products meet household needs (ready availability, quantity and cost), satisfy government standards and reach to un-served areas?	Yes for quantity, cost, standards and reach	Yes, but not for all of quantity, cost, standards and reach	No	0.5	Sanitation marketing component of WSP-supported scaling up project is trying to address this, but recently started , supply chain study at national level under preparation	(1) WSP Sanitation marketing research report (2) National Action Plan Workshop discussions

Building block	Areas of evidence for assessment	Question	High (1)	Medium (0.5)	Low (0)	Score	Explanation for score	Source of evidence
Markets	Private sector capacity	Is there sufficient mason/artisan/small business capacity to meet household needs (quantity, quality and cost)?	Yes for quantity and cost	Yes, for quantity but not for cost	Neither	0	Sanitation marketing component of WSP-supported scaling up project is trying to address this, but recently started	WSP Sanitation marketing research report.
Markets	Private sector development	Does the government have programs to promote and guide the domestic private sector and facilitate innovation for the provision of sanitation services in rural areas?	Yes, with various components	Yes, but either being developed or has gaps	No promotion, guidance or encouragement	0	Sanitation marketing component of WSP-supported scaling up project is trying to address this, but recently started	WSP Sanitation marketing research report.
Markets	Management of Disaster Risk and Climate Change	Do local government or rural service providers have plans for coping with natural disasters and climate change?	Yes, the majority of rural service providers have a plan for disaster risk management and climate change	No. Only some service providers have a plan for disaster risk management and climate change or most service providers have undertaken a vulnerability assessment.	No service provider has a climate action plan or has undertaken a vulnerability assessment.	0	Not very relevant as rural sanitation is a household responsibility - no service providers	National Action Plan NSED / NGPES National Health Plan
Up-take	Support for expansion	Are expenditures at the local level in line with the national sanitation policy and are they sufficient to achieve national targets?	In line with policy and sufficient to achieve national targets	In line with policy but insufficient to achieve national targets	Not in line with policy and insufficient to achieve national objectives	0	Little government investment – most investment is by households	(1) National Action Plan (2) National Health Plan
Up-take	Incentives	Has government (national or local) developed any policies, procedures or programs to stimulate uptake of rural sanitation services and behaviours by households?	Policies and procedures (instruments) developed and being implemented	Some policies and procedures (instruments) developed but not implemented	No policies or procedures (instruments) exist	0.5	7-Step Process for implementation, incl. Community dialogue; plus CLTS and Sanitation Marketing are some of the approaches suggested in National Action Plan.	(1) National Action Plan (2) National Health Policy (3) Clean and Improvement Project (4) Project Implementation Plan for scaling up rural sanitation
Up-take	Behaviors	Is the government generating and using evidence to monitor and analyze household sanitation behaviour change and take action to improve sustainability?	Research used to understand behavior and take action across a variety of behaviors	Research used to understand behavior but no action	Research not used and no action	0	Formative research under preparation to inform national behaviour change / demand creation strategy. But to date only sporadic small-scale research has been carried out.	(1) National Action Plan (2) Report on behaviour change in community (SNV brief)
User outcomes	Sub-sector progress	Is the sub-sector on track to meet the stated target?	On-track	Off-track but keeping up with population growth	Off-track	1	JMP shows rural access of 48% (2011). At 2.8% annual growth progress is on track to meet the 2015 national target of 60% (however off-track to meet the 2020 target)	(1) Nam Saat monitoring report (2) JMP 2013 update (3) LSIS 2012

Building block	Areas of evidence for assessment	Question	High (1)	Medium (0.5)	Low (0)	Score	Explanation for score	Source of evidence
User outcomes	Equity of use	What is the ratio of improved toilet access between the lowest and highest quintile in rural areas?	Less than 2 times	Between 2 and 5	More than 5 times	0	JMP shows that 81% access for richest quintile, 10% for poorest, which is a ratio of 8.5	(JMP special tabulation based on MICS 2006
User outcomes	Hygienic use of quality facilities	What percentage of people living in rural areas use improved toilet facilities (excluding shared facilities)?	More than 75% of people use toilets	Between 50% and 75% of people use toilets	Less than 50% of people use toilets	0	48%	JMP 2013 Update
URBAN SANITATION								
ENABLING								
Policy	Sector targets	Are there USH access targets (household level and sewerage/ septage management) in the national level development plan?	Yes, targets for urban household access and sewerage/ septage management included in the development plan	Targets for urban household access included in the development plan but no sewerage or septage management targets included	No urban sanitation targets in the development plan	0	No mention of such targets for urban sanitation in NSEDP nor in the Draft National Urban Sanitation and Wastewater Strategy (2009)	Draft National Urban Sanitation and Wastewater Strategy (2009) and NSEDP
Policy	Sector policy	Is there an urban sanitation policy that is agreed by stakeholders, approved by government, and publicly available?	Policy officially approved and publicly available	Policy drafted and agreed but not officially approved	No policy	0	A National Urban Wastewater Strategy is yet to be finalised and adopted; however an overall Strategic Framework for the Water and Sanitation Sector 2013-2020 has been issued	(1) Draft Urban Wastewater Strategy (2009) (2) WSP/ SNV Study on sanitation in Vientiane (3) JICA Water-Environment Study for Vientiane (2011) (4) Strategic Framework for the Urban Water and Sanitation Sector 2013-2020
Policy	Institutional roles	Are the institutional roles of urban sanitation subsector players (national/state and local government, service provider, regulator etc.) clearly defined and operationalised?	Defined and operationalized	Defined but not operationalized	Not defined	0.5	Respective roles of MWPT and Ministry of Water Resources and Environment fairly clear but responsibility for provision of urban sanitation services (esp. wrt wastewater) in Vientiane and other urban centres is not well defined – partly because there is no sewerage so far.	(1) Draft Urban Wastewater Strategy (2) Environment Protection Law No.02-99/NA/1999 (3) Water Supply and Water Resources Law No. 02-96/NA/ 1996 (4) Hygiene and Health Promotion Law No. 01/NA/2001 (5) Urban development law

Building block	Areas of evidence for assessment	Question	High (1)	Medium (0.5)	Low (0)	Score	Explanation for score	Source of evidence
Planning	Fund flow coordination	Does government have a process for co-ordinating multiple investments in the sub-sector (domestic or donor, e.g. national grants, state budgets, donor loans and grants etc.)?	Coordination process defined and operationalized	Coordination process defined but not operationalized	Not defined/ no process	0.5	Exists only for domestic funds/budget, but is ad hoc for external funds	(1) WSP Sanitation Financing Study (2) Draft Urban Wastewater Strategy (3) Strategic Framework for the Urban Water and Sanitation Sector 2013-2020
Planning	Investment plans	Is there a medium term investment plan for urban sanitation based on national targets that is costed, prioritises investment needs, is published and used?	Investment plan based on priority needs exists, is published and used	Exists but not used, or under preparation	Exists but not defined/ no process	0.5	Under the Strategic Framework for the Urban Water and Sanitation Sector 2013-2020, a waste water strategy and investment plan is under preparation.	(1) Draft Urban Wastewater Strategy (2) JICA Water-Environment Study for Vientiane (3) Strategic Framework for the Urban Water and Sanitation Sector 2013-2020
Planning	Annual review	Is there an annual multi-stakeholder review in place to monitor subsector performance, to review progress and set corrective actions?	Review of performance and setting of corrective actions	Review of performance but no setting of corrective actions	No review or setting of corrective actions	0	DHUP has a good bilateral coordination with individual development partners, but there is no sector-wide process.	SDA workshop
Planning	HR capacity	Has an assessment been undertaken of the human resource needs in the sub-sector to meet the sub-sector target and is the action plan being implemented?	Assessment undertaken and actions being implemented	Assessment undertaken but no action being taken	No assessment undertaken	0.5	Draft HR capacity building assessment of the DHUP (including water supply and sanitation)	Draft HR capacity building assessment of the DHUP (including water supply and sanitation) (no reference)
Budget	Adequacy	Are the annual public financial commitments to the urban sanitation sub-sector sufficient to meet national targets for the subsector?	More than 75% of what is needed	Between 50-75% of needs	Less than 50% of needs	0	There are no specific urban sanitation and wastewater targets and no substantive budgets or investment plan as illustrated by model	(1) Draft Urban Wastewater Strategy (2) National / sub-sector budgets, (3) WSP Sanitation Financing Study WSP (4) ESI reports
Budget	Structure	Does the budget structure permit investments and subsidies (operational costs, administration, debt service, etc) for the urban sanitation sector to be clearly identified?	Yes for investment and for subsidies	Yes for investment but not subsidies	No	0	There are no substantive budgets or investment plan	(1) National / sub-sector budgets, (2) WSP Sanitation Financing Study. Score changed to zero as the draft WWIP has not been taken up by govt
Budget	Comprehensive	10. Does the government budget comprehensively cover domestic and official donor investment/subsidy to urban sanitation?	More than 75% of funds to sub-sector on budget	Between 50-75% of funds to sub-sector on budget	Less than 50% of funds to sub-sector on budget	0	There is not yet significant external support for urban sanitation; small-scale support of BORDA is off-budget	(1) National / sub-sector budgets, (2) WSP Sanitation Financing Study.

Building block	Areas of evidence for assessment	Question	High (1)	Medium (0.5)	Low (0)	Score	Explanation for score	Source of evidence
DEVELOPING								
Expenditure	Utilization of domestic funds	What percentage of domestic funds budgeted for urban sanitation are spent (3 year average)?	Over 75%	Between 50% and 75%	Less than 50%	1	Expert judgement: no bottlenecks in spending since domestic budgets (with Vientiane Public Works Department and VUDA) are very small. Main constraint is budget allocation, not spending.	Annual sub-sector budgets.
Expenditure	Utilization of external funds	What percentage of external funds budgeted for urban sanitation are spent (3 year average)?	Over 75%	Between 50% and 75%	Less than 50%	1	Donor funding is very small - easy to spend.	Documents that consolidate funding sources (external funding) for DHUP.
Expenditure	Reporting	Is urban sanitation expenditure versus budget audited and reported on in a consolidated format for all sources of domestic and official donor expenditure?	Yes for domestic and donor expenditure	Yes for domestic expenditure	No	0	In general, audit conducted for domestic expenditure, but when no budget for sanitation, no audit or consolidated reporting on sanitation investments	Audit report. (not publicly available)
Equity	Local participation	Are there clearly defined procedures for informing, consulting with and supporting local participation in planning, budgeting and implementing for urban sanitation developments?	Yes and systematically applied	Yes, but not systematically applied	No	1	Donor-funded projects normally adopt participatory approaches. Government-funded investments minimal to date (except public toilets). There is mention of community involvement under stakeholders co-ordination (p 25-26)	(1) Draft Urban Wastewater Strategy (2) JICA-funded pilots under MIREP 2 (technical support by BORDA) (3) UN-Habitat project with DHUP.
Equity	Budget allocation criteria	Have criteria (or a formula) been determined to allocate urban sanitation funding equitably to urban utilities or service providers and among municipalities and is it being consistently applied?	Yes, applied consistently	Yes, but not applied consistently	No	0	Outline budget allocation among municipalities but no mention of criteria (P.58)	Draft Urban Wastewater Strategy
SUSTAINING								
Equity	Reducing inequality	Do local government or urban service providers (national or in 3 largest cities) have specific plans or measures developed and implemented for serving the urban poor?	Plans developed and implemented	Plans developed but not implemented	No plans documented	0	Draft strategy says implementing agencies should encourage service providers to expand services for to the poor ; however no implementation; no coherent support to poor for urban on-site sanitation	Draft Urban Wastewater Strategy (not adopted) p56-57
Output	Quantity (access)	Is the annual expansion of urban households gaining access to safe sanitation sufficient to meet the sub-sector targets?	Over 75% of that needed to reach sector targets	Between 75% and 50% of that needed to achieve targets	Less than 50% of that needed to reach targets	0	On-site target 2015 already met and 2020 target feasible; but no wastewater treatment targets or progress	(1) Information from the Water Supply Division and Urban Planning Division (2) Projects related to infrastructure and environment.

Building block	Areas of evidence for assessment	Question	High (1)	Medium (0.5)	Low (0)	Score	Explanation for score	Source of evidence
Output	Quantity (treatment)	Is the annual increase in the proportion of faecal waste that is safely collected and treated growing at the pace required to meet the sub-sector targets (for both on-site and sewerage)?	For collection and for treatment	For collection but not for treatment.	Not for collection or treatment (or if no target)	0.5	No treatment targets and little being done to improve faecal sludge management. There is almost no wastewater treatment and no investment plan, though MPWT has expressed an intention to expand the use of DEWATS.	(1) VUDDA. (2) Vientiane household sanitation study (WSP/SNV).
Output	Reporting	Are there procedures and processes applied on a regular basis to monitor urban sanitation access and the quality of services and is the information disseminated?	Quality, quantity and disseminated	Quality or quantity	Neither	0.5	Periodic monitoring but information has not been disseminated; on-site urban sanitation reported through surveys only	Information from VUDDA
Maintenance	Collection and treatment	What is the proportion of total faecal waste generated that gets safely collected and treated?	Over 75% of that generated is collected and treated	Over 50% of that generated is collected from the HH level	Less than 50% of that generated	0	Almost no wastewater treatment, no investment plan and septage management is not regulated or promoted.	(1) JICA Water-Environment Study for Vientiane, (2) WSP / SNV Household Sanitation Study, (3) VUDDA; (4) Background document on Infrastructure Sector Working Group – Round Table Meeting
Maintenance	Cost recovery	Are O&M costs of treatment systems (beyond household level facilities) assessed/known and fully met by either cost recovery through user fees and/ or local revenue or transfers?	O&M costs known and >75% covered through cost recovery	O&M costs are known and 50% covered through cost recovery	O&M costs not known	0	No evidence available; some fees are said to be collected for institutional small-scale DEWATS	Information from VUDDA/ provincial (Champasak and Luang Prabang) - only for public toilet. DEWATS system collects user fees.
Maintenance	Discharge	Are there norms and standards for wastewater discharge for septage and sewerage treatment plants that are systematically monitored under a regime of sanctions (penalties)?	Exist and are monitored under a regime of sanctions	Exist and majority are monitored, but there are no sanctions	Standards exist but majority of plants are not regularly monitored	0.5	No sewerage. Standards exist but no monitoring takes place Vientiane has a septage disposal pond at landfill site but no treatment facility.	(1) National environmental quality criteria (Vorachit, Urban Planning Div); (2) Draft DHUP regulations on urban wastewater (approved by Mayor).
Maintenance	Management of Disaster Risk and Climate Change	Do local government or service providers (national or in 3 largest cities) have plans for coping with natural disasters and climate change?	Yes, the majority of urban service providers have a plan for disaster risk management and climate change	No. Only some service providers have a plan for disaster risk management and climate change or most service providers have undertaken a vulnerability assessment.	No service provider has a climate action plan or has undertaken a vulnerability assessment.	0	No plan, but DHUD, MPWT expressed interest to include natural disasters/ climate change into their plan and to collaborate with National Disaster Management Committee on this issue.	Information from Dept. of Urban Development, MPWT

Building block	Areas of evidence for assessment	Question	High (1)	Medium (0.5)	Low (0)	Score	Explanation for score	Source of evidence
Expansion	Uptake	Has government (national or local) developed any policies, procedures or programs to stimulate uptake of urban sanitation services and behaviours by households?	Policies and procedures (instruments) developed and being implemented	Some policies and procedures (instruments) developed but not implemented	No policies or procedures (instruments) exist	0.5	ADB Small Towns Project incentivizes septic tank construction, as water connections are offered free afterwards; no program to support regular emptying of tanks/pits	SDA workshop discussion
Expansion	Plans	Do government/service providers have business plans for expanding the proportion of city-wide faecal waste that is safely collected and treated?	Business plans for expansion of collection & treatment being implemented	Business plans for expansion of collection & treatment under preparation	No Business Plans	0	No sewerage, so no expansion plans exist yet; only some master planning for drainage and sewerage in a few cities	SDA workshop discussion
Expansion	Private sector development	Does the government have ongoing programs and measures to strengthen the domestic private sector for the provision of sanitation services in urban or peri-urban areas?	Yes, various components	In development, few components	No	0	Potentially some private sector involvement in DEWATS; but no programme of support ongoing for private sludge emptiers/operators	(1) JICA Water-Environment Study for Vientiane; (2) Draft National Urban Wastewater Strategy SDA workshop discussion
User Outcomes		Is the sub-sector on track to meet the stated target?	On-track	Off-track but keeping up with population growth	Off-track	1	Target for access to improved sanitation met for 2015, and on track for 2020. No target set for wastewater treatment.	JMP, LSIS, MICS.
User Outcomes	Equity of use	What is the ratio of improved toilet access between the lowest and highest quintile in urban areas?	Less than 2 times	Between 2 and 5 times	More than 5 times	0.5	JMP equity analysis shows that 99% access to improved sanitation for richest quintile, and 35% for poorest quintile, equal to ratio of 2.8.	JMP special tabulation based on MICS 2006
User Outcomes	Use of facilities	What percentage of people living in urban areas use improved toilet facilities (excluding shared facilities)?	More than 90% of people	More than 75% of people	Less than 75% of people	0.5	JMP Update indicates 87%	JMP 2013 Update
RURAL WATER SUPPLY								
ENABLING								
Policy	sector targets	Are there RMS access targets in the national level development plan?	Yes, there are targets for rural water supply in the development plan	There are national targets in the development plan but none for rural water.	No targets in the development plan	1	Rural targets in NSEDP: 75% improved water supply by 2015. National Action Plan has no target beyond 2015.	(1) National Action Plan (2) NSEDP (3) NGPES (4) National Health Plan
Policy	Sector policy	Is there a rural water policy that is agreed by stakeholders, approved by government, and is publicly available?	Policy officially approved and publicly available	Policy drafted and agreed but not officially approved	No policy	0	No policy but draft RWSS Strategy. Action Plan approved in 2012 but strategy has to go to National Assembly.	(1) Draft RWSS Strategy and approved National Action Plan. (2) 2004 RWSS Strategy (MOH)

Building block	Areas of evidence for assessment	Question	High (1)	Medium (0.5)	Low (0)	Score	Explanation for score	Source of evidence
Policy	Institutional Roles	Are the institutional roles of rural water sub-sector players (national/state & local government, service provider, regulator etc.) clearly defined and operationalized?	Defined and operationalized	Defined but not operationalized	Not defined	1	Nam Saat Central has a mandate to guide the rural WASH sub-sector, but some debate around their future role in relation to rural water supply schemes.	(1) Decree 37 in 1999 (confirmed Nam Saat roles, responsibilities) (2) The latest Decrees 2012? (3) 1982 Decree establishing Nam Saat (4) Roles of local and provincial level in rural water supply
Planning	Fund flow coordination	Does government have a process for co-ordinating multiple investments in the sub-sector (domestic or donor, eg. National grants, state budgets, donor loans and grants etc.)?	Coordination process defined and operationalized	Coordination process defined but not operationalized	Not defined/ no process	0.5	Improved co-ordination including Joint Annual Sector Reviews is proposed in draft RWSS strategy. All big NGOs go through Ministerial approval; KOIKA in the process of getting approval.	(1) WSP - Sanitation and Hygiene Financial Study (2) World Bank Water Sector Review 2010.
Planning	Investment plan	Is there a medium term investment plan for rural water based on national targets that is costed, prioritizes investment needs, is published and used?	Investment plan based on priority needs exists, is published and used	Exists but not used, or under preparation	Does not exist	0.5	Investment sheet included in National Action plan, but no detailed investment plan with priority areas for investments in rural water supply.	Annual workplans of Nam Saat showing all ongoing investments and external support.
Planning	Annual review	Is there an annual multi-stakeholder review in place to monitor subsector performance, to review progress and set corrective actions?	Review of performance and setting of corrective actions	Review of performance but no setting of corrective actions	No review or setting of corrective actions	0.5	There is an annual round table meeting for the sub-sector, and a MCH Technical Sub-Working Group under the Dept of Hygiene which looks at WASH issues. Draft strategy proposes a RWSS annual sector review using 'golden indicators' for the sector. In the past, there were national workshops reviewing progress but for government stakeholders only.	(1) Draft National Strategy for Rural Water Supply, Sanitation and Hygiene - Action Plan; (2) Minutes of Nam Saat national meetings (for the last 3 years).
Planning	HR Capacity	Has an assessment been undertaken of the human resource needs in the sub sector to meet the subsector target and is the action plan being implemented?	Assessment undertaken and actions being implemented	Assessment undertaken but no action being taken	No assessment undertaken	0	Some project-based assessments done but not a comprehensive one for the whole sub-sector. Training has been given to Nam Saat staff as per recommendations but no systematic follow-up.	(1) SIDA HR Development Plan 2002, (2) SNV-IWA capacity gap assessment 2012, (3) WASH Dip Study 2012 -- WSP, (4) National Action Plan, (5) HR strategy for health staff up to 2020

Building block	Areas of evidence for assessment	Question	High (1)	Medium (0.5)	Low (0)	Score	Explanation for score	Source of evidence
Budget	Adequacy	Are the public financial commitments to the rural water sub-sector sufficient to meet the national targets for the sub-sector?	More than 75% of what is needed	Between 50-75% of needs	Less than 50% of needs	0	Capital budget expenditure for 2013: 6.5 billion Kip (combined for WATSAN and operational). No detailed breakdown provided yet. Little or no investment budget for 2010 and 2012. There could be provincial funding to rural water supply but negligible. 3.5 million from Nam Theun 2 in 2013. Deficit assessment from financial model is around 75%	(1) National Action Plan (2) WSP Sanitation/ Hygiene Financing Study (3) MOH / Nam Saat budget plan; (4) World Bank Water Sector Review 2010
Budget	Structure	Does the budget structure permit the investments and subsidies (operational costs, administration, debt service, etc.) for the rural water sector to be clearly identified?	Yes for investment and for subsidies	Yes for investment but not subsidies	No	0.5	The budget shows recurrent and capital; there are no subsidies to operation (all point source); budget data were already provided, but capital data is lacking.	(1) National Action Plan; (2) WSP Sanitation and Hygiene Financing Study (3) MOH / Nam Saat budget plan (4) World Bank Water Sector Review 2010.
Budget	Comprehensive	Does the government budget comprehensively cover domestic and official donor investment/subsidy to rural water?	More than 75% of funds to sub-sector on budget	Between 50-75% of funds to sub-sector on budget	Less than 50% of funds to sub-sector on budget	0.5	Financial model indicates govt spending to account for 2/3 of anticipated public investment. It is assumed that most NGO funding is off-budget and little external support is anticipated (UNICEF, JICA).	(1) National Action Plan (2) WSP Sanitation and Hygiene Financing Study (3) MOH / Nam Saat budget plan (4) World Bank Water Sector Review 2010.
DEVELOPING								
Expenditure	Utilization of domestic funds	What percentage of domestic funds budgeted for rural water are spent (3 year average)?	Over 75%	Between 50% and 75%	Less than 50%	0	No evidence. Expert judgment suggests that budget releases are slow and capacity at provincial Nam Saat to procure and implement is also low; only recurrent spending (salaries) seems to be unproblematic.	Capital expenditures from Nam Saat discussed in SDA workshops
Expenditure	Utilization of external funds	What percentage of external funds budgeted for rural water are spent (3 year average)?	Over 75%	Between 50% and 75%	Less than 50%	1	UNICEF evidence of 87% execution of budget. Spending not a major constraint as it happens within donor-funded projects.	MOH and Nam Saat budget plan
Expenditure	Reporting	Is rural water expenditure versus budget audited and reported on in a consolidated format for all sources of domestic and official donor expenditure?	Yes for domestic and donor expenditure	Yes for domestic expenditure	No	0	Auditing is done for donor-funded projects. Govt spending on new schemes is limited but does sometimes happen, for example in emergencies, though not audited.	(1) MOH/Nam Saat annual budget plan; expenditure reports, audit reports (2) Co-operation / co-ordination agreement between PRF; MOH on rural water supply construction.

Building block	Areas of evidence for assessment	Question	High (1)	Medium (0.5)	Low (0)	Score	Explanation for score	Source of evidence
Equity	Local participation	Are there clearly defined procedures for informing, consulting with and supporting local participation in planning, budgeting and implementing for rural water developments?	Yes and systematically applied	Yes but not systematically applied	No	0	Procedures are under review via UNICEF support. National Action Plan describes a stepped process for participation	(1) National Action Plan (2) Co-operation / co-ordination agreement between PRF, MOH (3) Community development guidelines.
Equity	Budget allocation criteria	Have criteria (or a formula) been determined to allocate rural water funding equitably to rural communities and is it being applied consistently?	Yes, applied consistently	Yes, but not applied consistently	No	0	Domestic funding so limited that one can hardly use an allocation mechanism, though government / Nam Saat have lists of most needy areas, based on overall poverty targeting strategy of government	(1) National Action Plan (2) List of priority districts (64 focal points)
Equity	Reducing inequality	Is there periodic analysis to assess whether allocation criteria and local participation procedures set by government have been adhered to and are reducing disparities in access?	Yes periodic analysis published and acted upon	Yes periodic analysis published but not acted upon	No	0	No specific procedures or criteria in use.	No analysis done on reducing inequalities
Output	Quantity	Is the annual number of new systems built (and systems replaced) sufficient to meet sector targets? (including output by government directly as well as through contractors and NGOs)	Over 75% of that needed to reach sector targets	Over 50% of that needed to reach sector targets	Less than 50% of that needed to reach sector targets	0	Government rural water supply figures indicate that 75% target for 2015 has already been met; however target for 2020	(1) Nam Saat Annual Report (includes donor activities), based on provincial reports. (2) Summary sheet for new systems built/replaced.
Output	Quality of water	Are there drinking water quality standards for rural water and are all new installations tested?	Standards exist and new installations tested	Standards exist but new installations not tested	No	0	Most new schemes are developed by aid agencies and probably tested, but this may not apply to all new water supplies developed privately or by government. Nam Saat resources for testing are very limited.	Evidence came from workshop discussion.
Output	Reporting	Is the number of new schemes and their locations reported in a consolidated format each year?	Yes with full listing of locations	Yes but without a full listing of locations	No	0	Individual projects report to districts but no consolidated report is produced at provincial / national level.	Nam Saat's monitoring report (a consolidated list of schemes)
SUSTAINING								
Maintenance	Functionality	Are there regular asset register updates of rural water infrastructure including their functional status?	Asset register and regular updating of functionality	Asset register but no updating of functionality	Neither	0	This is not done widely though it might have been tried in a few places;	National Action Plan
Maintenance	Cost recovery	Is there a national policy on O&M costs and are O&M costs known and covered from subsidies and/ or user fees?	O&M policy exists, costs are assessed and >75% covered	O&M policy exists, costs are estimated and >50% covered	No O&M policy, costs not known	0	O&M arrangements and costs are not formalised; user groups tend to collect money only when something breaks down.	(1) National Action Plan (2) Nam Saat's O&M manual (not developed into national guidelines)

Building block	Areas of evidence for assessment	Question	High (1)	Medium (0.5)	Low (0)	Score	Explanation for score	Source of evidence
Maintenance	Spare parts chain	Is there a system defined for spare parts supply chain that is effective in all places?	Systems defined and spares available in >50% of villages	Systems defined but spares not available up to 50% of villages	Systems not defined	0.5	Small parts can be found in markets; provincial authorities and Nam Saat respond to village requests but village pays the cost and responses generally slow if spare part need to be procured	Evidence reported by stakeholders
Maintenance	Management of Disaster Risk and Climate Change	Do rural service providers have plans for coping with natural disasters and climate change?	Yes, the majority of rural service providers have a plan for disaster risk management and climate change	No. Only some service providers have a plan for disaster risk management and climate change or most service providers have undertaken a vulnerability assessment.	No service provider has a climate action plan or has undertaken a vulnerability assessment.	0	Emergency responses only in case of flooding/disasters	Evidence reported by stakeholders
Expansion (of existing services)	Investment support	Are piped systems in rural areas recognized as management entities and given technical and financial support to expand their systems either by local government or larger utilities?	Recognized and supported	Recognized but not supported	Neither	1	There are some small piped schemes in rural areas operated by provincial water utilities (NPSEs) or developed under the MIREP project and under private sector management. So there has been some technical and investment support, but on a small scale. Other small piped gravity fed systems are under informal community management.	Report of WSP/GRET collaboration and GRET/DHUP collaboration (MIREP project).
Expansion (of existing services)	Plans	Are there scheme-level plans for the expansion of piped systems in rural areas?	Yes in most rural areas	Yes in around half of rural areas	In a small proportion, or no rural areas	0	Health Districts do not fund piped schemes – this would only be done by NPSEs and rarely happens.	Expert judgement based on workshop feedback
Expansion (of existing services)	Investment finance	Are expansion costs for rural water being covered by user fees and/or public grants?	Yes in most rural areas	Yes in around half of rural areas	In a small proportion, or no rural areas	0	In principle NPSEs would fund this from user fees, but in practice it very rarely happens.	Expert judgement based on workshop feedback
User outcomes	Sub-sector progress	Is the sub-sector on track to meet the stated target?	On-track	Off-track but keeping up with population growth	Off-track	0.5	JMP reports rural access to improved water supply 37% (2000); 63% (2011) while 2015 national target is 75%. The sub-sector is probably on-track to reach the 2015 target, but off-track to meet the 2020 100% access target.	Trends from JMP and recent LSS

Building block	Areas of evidence for assessment	Question	High (1)	Medium (0.5)	Low (0)	Score	Explanation for score	Source of evidence
User outcomes	Equity of use	What is the ratio of improved drinking water access between the lowest and highest quintile in rural areas?	Less than 2 times	Between 2 and 5	More than 5 times	1	JMP shows that 69% access for richest quintile, 51% for the poorest quintile, which is a ratio of 1.3. But for access to house connections the ratio is 44:1.	JMP Equity analysis (2010); special tabulation using IMICS 2006
User outcomes	Quality of user experience	Of the households using an improved drinking water source, what proportion are using piped drinking water in the dwelling and yard / plot?	More than 50% of households	More than 25% of households	Less than 25% of households	0	LSIS data indicates that just under 10% of the rural population with improved access has water piped on to the premises. JMP (2013) estimate is 5%.	LSIS 2012.
URBAN WATER SUPPLY								
ENABLING								
Policy	Sector targets	Are there UWS access targets in the national level development plan?	Yes, there are urban water supply targets in the development plan	There are national targets in the development plan but none for urban water.	No targets in the development plan	1	PM decree of 1999 has target of 80% for 2020. 7th NSEDP targets: 65% house connections for NPSE systems and 80% safe water for entire population by 2015.	(1) Draft Urban Development Strategy to 2030; (2) PM decree 37/1999
Policy	Sector policy	Is there an urban water policy that is agreed by stakeholders, approved by government, and publicly available?	Policy officially approved, and publicly available	Policy drafted and agreed but not officially approved	No policy	1	No specific policy though policy elements are in other docs including Water Law, NSEDP, tariff regulation. A specific urban WS policy is under preparation with help of UN-HABITAT.	(1) World Bank Sector Review 2010 (2) PM decree 37/1999 (3) Draft Urban Development Strategy 2030
Policy	Institutional Roles	Are the institutional roles of urban water sub-sector players (national/state and local government, service provider, regulator etc.) clearly defined and operationalised?	Defined and operationalized	Defined but not operationalized	Not defined	1	Yes – in a range of decrees and legal instruments.	(1) Water Law 2009 (2) PM Decree 13269/DHUP 2008 (3) Ministerial Decree 13265/ 2008 (4) Ministerial Decree 13266/2008/ WASRO 2008 (5) Ministerial Decree 13269/ 2008 (6) PM Decree 37/1999

Building block	Areas of evidence for assessment	Question	High (1)	Medium (0.5)	Low (0)	Score	Explanation for score	Source of evidence
Planning	Fund flow coordination	Does government have a process for co-ordinating multiple investments in the sub-sector (domestic or donor e.g. national grants, state budgets, donor loans and grants etc.)?	Coordination process defined and operationalized	Coordination process defined but not operationalized	Not defined/ no process	1	Sector Investment Plan adopted in 1999, updated annually and used for co-ordination. Provinces send budget plans to the national level for approval of DHUP, MPWT and MPI. Sources of funding (central, provincial, external) are identified in the consolidated plan. The Round Table Meeting and Infrastructure Working Group are also used for coordination.	(1) Reports/Minutes of Annual Round Table Meeting (RTM) under Infrastructure Sector Working Group; (2) PM decree 37/1999
Planning	Investment plan	Is there a medium term investment plan for urban water based on national targets that is costed, prioritises investment needs, is published and used?	Investment plan based on priority needs exists, is published and used	Exists but not used, or under preparation	Does not exist	1	Investment plan is updated annually but not published on website; approved before start of fiscal year (Oct 1st). Then translated into overall plan of MPWT and incorporated into national budget. Criteria for prioritising investments include (amongst other things) population, poverty status, distance from main road.	(1) Water Supply Investment Plan (2005-2020); (2) Draft Urban Development Strategy to 2030 (3) Reports/Minutes of Annual Round Table Meeting under Infrastructure Sector Working Group; (4) Draft National Urban Wastewater Strategy
Planning	Annual review	Is there an annual multi-stakeholder review in place to monitor sub-sector performance, to review progress and set corrective actions?	Annual review of performance and setting of corrective actions	Annual review of performance but no setting of corrective actions	No review or setting of corrective actions	1	Infrastructure working group meets before annual Round Table Meeting. This is the official sub-sector co-ordination mechanism.	Minutes/report of Annual Round Table Meeting under Infrastructure Sector Working Group.
Planning	HR Capacity	Has an assessment been undertaken of the human resource needs in the sub-sector to meet the sub-sector target and is the action plan being implemented?	Assessment undertaken and actions being implemented	Assessment undertaken but no action being taken	No assessment undertaken	0.5	Several project-based assessments have been done (e.g. JICA) and capacity building support provided accordingly. Draft HR Strategy is under development but currently DHUP has no HR action plan.	JICA HR Assessment 2011
Budget	Adequacy	Are the public financial commitments to the urban water sub-sector sufficient to meet the national targets for the sub-sector?	More than 75% of what is needed	Between 50 and 75% of needs	Less than 50% of needs	0.5	Anticipated commitments sufficient to cover new investments to reach 2020 target but not enough to cover full replacement costs (unless cost recovery is improved).	(1) Financial data from DHUP; (2) WSS Investment Plan (SIP, 2013)
Budget	Structure	Does the budget structure permit investments and subsidies (operational costs, administration, debt service, etc.) for the urban water sector to be clearly identified?	Yes for investment and for subsidies	Yes for investment but not subsidies	No	1	Budget does split investment and subsidies	(1) Financial data from MPWT (2) National budget statements of MPWT (3) DHUP summary report of projects investment by donors (update as of Jan 2013) (4) 3 provincial investment reports

Building block	Areas of evidence for assessment	Question	High (1)	Medium (0.5)	Low (0)	Score	Explanation for score	Source of evidence
Budget	Comprehensive	Does the government budget comprehensively cover domestic and official donor investment/subsidy to urban water?	More than 75% of funds to sub-sector on budget	Between 50-75% of funds to sub-sector on budget	Less than 50% of funds to sub-sector on budget	1	ADB, JICA projects and government share are 'on budget.' Chinese investments are also included in the plan, but not clear if also on budget; Judgement of sector stakeholders is that there is no bottleneck in spending the recurrent domestic budget or the small capital budget.	DHUP summary report of project investments by donors (updated Jan 2013)
DEVELOPING								
Expenditure	Utilization of domestic funds	What percentage of domestic funds budgeted for urban water are spent (3 year average)?	Over 75%	Between 50% and 75%	Less than 50%	1	Based on judgement from sector stakeholders, there is no bottleneck for spending of recurrent domestic budget, neither for the small capital budget.	DHUP summary report of project investments by donors (updated Jan 2013)
Expenditure	Utilization of external funds	What percentage of external funds budgeted for urban water are spent (3 year average)?	Over 75%	Between 50% and 75%	Less than 50%	1	No overview available. Expert judgement suggests that delays in implementation are common and most loans take longer than planned, however disbursement rates are still above 75% of planned amounts	DHUP summary report of project investments by donors (updated Jan 2013)
Expenditure	Reporting	Do urban utilities (national or 3 largest utilities) have audited accounts and balance sheet?	Audited accounts and balance sheet	Balance sheet but not audited	No balance sheet	0.5	All NPSEs produce annual reports. Audit law exists but is not enforced; taxation department and MEF should request external audits but do not. Vientiane NPSE was audited in 2006 but not since.	(1) Provincial Nam Papa annual report; (2) WASRO report; (3) Audited balance statements/ audit report from utilities
Equity	Local participation	Are there clearly defined procedures for informing, consulting with and supporting local participation in planning, budgeting and implementing for urban water developments?	Yes and systematically applied	Yes, but not systematically applied	No	1	Existence of EIA guidelines applicable to water supply projects that require consultation-Feasibility studies tend to include willingness to pay assessments. No local representatives on NPSE Boards, but trend towards performance contracts between NPSE and provinces	(1) Water Supply Law (2) Tariff setting guideline (3) Feasibility studies from donor -funded projects (4) EIA procedures

Building block	Areas of evidence for assessment	Question	High (1)	Medium (0.5)	Low (0)	Score	Explanation for score	Source of evidence
Equity	Budget allocation criteria	Have criteria (or a formula) been determined to allocate urban water funding equitably to urban utilities or service providers and among municipalities and is it being consistently applied?	Yes, applied consistently	Yes, but not applied consistently	No	1	Investment plans follow government priorities beyond the water sector: capital then provincial capitals, economic zones and border towns, and last priority are emerging urban districts >4000 people. Private sector supposed to step in for centres with <4000 population. Donors have their own criteria: JICA supports big towns; ADB small towns, esp. border towns and economic zones, though next phase will be more demand-driven.	(1) Annual Urban Water Sector Report (2) WASRO Report and discussion stakeholder workshop
Equity	Reducing inequalities	Have urban utilities or service providers (national or in 3 largest cities) developed and implemented specific plans for serving the urban poor?	Plans developed and implemented	Plans developed but not implemented	No plans documented	0.5	No official pro-poor tariff policy, but project-driven initiatives; for example free or subsidized connections for the poor in small towns; increasing block tariffs (8m3 / month lifeline); revolving funds.	(1) ADB / UN-HABITAT's revolving funds (2) Background document for Infrastructure Sector Working Group – Round Table Meeting (3) Poverty classification guideline by MPI
Output	Quantity	Is the annual expansion of household connections and standposts in urban areas sufficient to meet the sub-sector targets?	Over 75% of that needed to reach sector targets	Over 50% of that needed to reach sector targets	Less than 50% of that needed to reach sector targets	1	2008-2010 average annual new connections was roughly 15,500 against a requirement of 15,800 to meet target; so overall outputs are in line with 2015 targets	(1) Annual Urban Water Sector Report (2) WASRO reports 2008-2009-2010
Output	Quality of water	Are there drinking water quality standards for urban water that are regularly monitored and the results published?	Standards exist, there is a surveillance program, and results are published	Standards exist and there is a surveillance program but there is no publication of results	No standards, or standards exist but are not monitored	0.5	Sampling is irregular and not all NPSEs provide monitoring data to MOH.	(1) Water Regulation No.1371 MoH 2005 (2) Record of water quality sampling or MoH report of water quality situation (3) Water Quality Standards as discussed in workshop
Output	Reporting	Is the number of additional household connections made and stand posts constructed reported on in a consolidated format for the nation each year?	Yes with full listing of connections	Yes but without a full listing of connections	No	1	Reporting done by WASRO; however connections done through private sector / PPP schemes not included.	Annual Urban Water Sector Report (WASRO)
SUSTAINING								
Maintenance	Functionality	What is the weighted average percentage of non-revenue water across urban utilities (national or 3 largest utilities) (last 3 years average)?	Less than 20%	20% to 40%	More than 40%	0.5	Latest WASRO report: 32% in Vientiane is 32%; 35% nationally (earlier 28%)	Annual Urban Water Sector Performance Report (2010)

Building block	Areas of evidence for assessment	Question	High (1)	Medium (0.5)	Low (0)	Score	Explanation for score	Source of evidence
Maintenance	Cost recovery	Are all O&M costs for utilities (national or 3 largest utilities) being covered by revenues (user fees and/ subsidies) (last 3 years average)?	Operating ratio greater than 1.2	Operating ratio between 0.8 and 1.2	Operating ratio below 0.8	0.5	Data not available to calculate operating ratios. Score based on expert opinion and assessment of WASRO that stipulates room for improvement in cost recovery	Annual Urban Water Sector Performance Report 2009, 2010 and 2011
Maintenance	Tariff reviews	Are tariff reviews regularly conducted using a process and tariffs adjusted accordingly and published?	Conducted, adjusted and published	Conducted but not adjusted	Not conducted	0.5	Tariff reviews are due every three years, but this practice does not always happen. DHLP proposes tariff for Vientiane, provincial government endorses. In other provinces NPSes propose, governor approves. Regular reviews happen in ADB project towns only.	(1) Annual Urban Water Sector Performance Report (2010, 2011) (2) List of WASRO tariff approvals after review of tariff policy (2004) (3) Ministerial Decree 5336
Maintenance	Management of Disaster Risk and Climate Change	Do utilities (national or 3 largest utilities) have plans for coping with natural disasters and climate change?	Yes, the majority of urban service providers have a plan for disaster risk management and climate change	No. Only some service providers have a plan for disaster risk management and climate change or most service providers have undertaken a vulnerability assessment.	No service provider has a climate action plan or has undertaken a vulnerability assessment.	0	Not done - only some general vulnerability assessment at national level, and some water safety planning discusses risks for water sources.	Discussed at workshop
Expansion	Autonomy	Do utilities or service providers (national or 3 largest) have operational decision-making autonomy in investment planning, HR, finance (separate balance sheet) and procurement management?	Yes in all aspects	In all aspects except investment planning	No	0.5	Some autonomy but not for investment planning. NPSes are required to follow government administrative procedures and remuneration policies.	Lao Law on State Enterprises. (ADB sector review explains this in detail as evidence).
Expansion	Plans	Do service providers (national/state or 3 largest utilities) have business plans for expanding access to urban water?	Business plans for increasing access being implemented	Business plans for increasing access being prepared	No business plans	0.5	Under a new initiative, NPSes have to prepare business plans as part of ADB project, but not all have done so	Utilities' business plans or expansion plans
Expansion	Borrowing	Are utilities allowed by law to access, and are they accessing, commercial finance for expansion?	Allowed and accessing	Allowed but not accessing	Not allowed	0.5	So far only national loans are passed on to utilities with government guarantees. The assets belong to the state, so government has to approve any loans.	(1) Water Supply Law (2) State enterprise law (3) AFD study on how to access to non-sovereign loan

Building block	Areas of evidence for assessment	Question	High (1)	Medium (0.5)	Low (0)	Score	Explanation for score	Source of evidence
User outcomes	Sub-sector progress	Is the sub-sector on track to meet the stated target?	On-track	Off-track but keeping up with population growth	Off-track	0.5	Safe water target 80%. JMP 2013 reports urban access as 72% (2000), 83% (2011). Piped connections target 65%. Reported: 37% (2000) 58% (2011). Target for 2015 is on-track, but for 2020 target rate of progress needs to accelerate	JMP 2013 update; LSIS 2012.
User outcomes	Equity of use	What is the ratio of improved drinking water access between the lowest and highest quintile in urban areas?	Less than 2 times	Between 2 and 5	More than 5 times	1	MICS 2006 shows access to improved water in poorest quintile is 52% and in richest quintile is 100%; so 1:9; Access to piped water more in equal with 3.7 for house connections.	JMP equity data; special tabulation based on MICS 2006 (LSIS 2012 does not report urban access by wealth quintile)
User outcomes	Quality of user experience	What is the average number of hours of service per day across urban utilities? (Weighted by number of HH connections per utility)?	More than 12 hours per day	6 to 12 hours per day	Less than 6 hours per day	1	Government reports 24-hour supply except Phongsaly with 18 hrs supply. However, other sources report lower level of service and interrupted supply.	Annual Urban Water Sector Performance Reports (WASRO).

Annex 2:

Assumptions and Inputs for Financial Model

Table A2.1. Demographic Variables and Access Targets

Region	1995			2011			2020		
	Population in millions	Access		Population in millions	Access		Population in millions	Access	
		Water	Sanitation		Water	Sanitation		Water	Sanitation
Rural	4.0	32%	8%	1.8	63%	48%	5.1	100%	80%
Urban	0.8	75%	61%	4.6	83%	87%	2.5	100%	100%
National	4.8	39%	18%	6.4	70%	62%	7.6	100%	82%

** Annual population growth rates used were 2.9 and 2.1% for urban and rural areas, respectively.*

This annex describes the key inputs that were used to generate estimates of the capital expenditure (CAPEX) required and anticipated to meet government targets from 2011 (the mid-period year) to 2020. It discusses the sources, adjustments, and assumptions of the following information: exchange rates, demographic and access estimates, sector-specific technologies, and spending plans.

Exchange rates

Lao Kip amounts derived from various official budget documents and informal departmental, ministerial, and other estimates were converted into US dollars using a constant exchange rate at 18 March 2013 of LAK7845/US\$1. Consideration was given to using historical exchange rates which however appeared in certain instances to mask increases or decreases in expenditure levels because of exchange rate fluctuations. Projections from 2013 onward were usually made in US dollars.

Demographic and Access Estimates

The main demographic variables in the SDA financial model are rural and urban population estimates or projections for 1995, 2011, and the target year (2020). Combined with 2011 coverage rates and target coverage rates for water and sanitation, this information assists in the calculation of the number of people who will be needing access to improved facilities from 2011 to the target year. The second set of information refers to the average size of households. This is used to convert costs of facilities, which are generally expressed on a per household basis, into per capita terms.

Information on average household sizes was drawn from the 2009–10 Household Income and Expenditure Survey (National Statistics Office, 2012).

Population and access estimates for 1995 are from JMP progress report of 2010 (issued 2012). Population estimates

for 2011 are based on figures stated in the Seventh National Socio-Economic Development Plan 2011-2015 (NSDEP7) (p.10) increased by a growth rate of 2.1% per that document. The urban percentage was taken from the national urban Development Strategy. Access figures for 2011 are from JMP Progress on sanitation and drinking water access (issued 2013). The population estimate for 2020 was determined by taking the 2.1% annual growth rate for 1995-2005 as stated in NSDEP7 (p. 10) and applying it to the total population, and the urban percentage based on Draft Urban Development Strategy. Access to clean water of 100% in 2020 is stated in the Lao 2004 National Growth and Poverty Eradication Strategy (p.40), citing the 2001 Seventh Party Congress development goals, and the 2020 100% access targets for both water supply and sanitation were also agreed by participants in the SDA validation meeting in May 2013.

Water Supply Technology Distribution, Unit Costs and Lifespan

Information on the distribution of technologies is used to calculate capital investment required to meet national targets. Table A2.2 presents information on the estimated household distribution, costs, and lifespans of key water supply technologies.

The distribution of water supply technologies for 2011 were based on an average of the 2006 Multiple Independent Cluster Survey³⁶ and the 2011 Lao Social Indicators Survey.³⁷ The projections for 2020 were based on discussions with representatives of Nam Saat and DHUP during a workshop in May 2013 and represent moderate increases in service levels.

Unit capital costs represent expenditures for materials and labor used in the construction of various types of supply and were estimated by Nam Saat and by the Ministry of Public Works and Housing, Department of Housing and Urban Planning for a 2010 World Bank sector survey. These figures were validated for urban water supply at the May 2013 workshop. Lifespan represents the projected number of years before a facility is fully replaced and is based on general design criteria, expert opinion, and discussions with Nam Saat and DHUP senior staff. User contributions were validated during the same workshop and represent the expected contribution of households to the respective technologies. As can be seen, in urban areas, there is no public investment in such technologies, and the 99% represents a full self-investment by households. Urban piped technologies do not include user contributions, as DHUP implements a policy where connections are freely provided if households investment in on-site sanitation.

Table A2.2 Selected Information on Water Supply Sources

Option	Distribution of facilities (2010, %) ^a		Projected distribution of facilities (2030, %) ^a		Unit capital cost (US\$/capita)	Lifespan (years)
	Rural	Urban	Rural	Urban		
Piped into yard	10	67	0	90	82	20
Piped into neighborhood	21	14	55	10	9	10
Water well in yard	3	1	2	0	31	10
Public well	8	2	3	0	6	10
Spring	37	2	10	0	95	18
Rainwater	21	13	30	0	90	18

^a As a share of households with access to improved facilities.

³⁶ MICS (2006)

³⁷ LSIS (2012) Lao social Indicator Survey Note the survey data is from 2011.

Table A2.3 Selected Information on Sanitation Technologies

Option	Distribution of facilities (2010, %) ^a		Projected distribution of facilities (2030, %) ^a		Unit cost (US\$/capita)	Lifespan (years)
	Rural	Urban	Rural	Urban		
Sewerage and treatment	0	21	0	70	899	25
Individual flush toilets	3	33	5	20	49	25
Shared flush toilets	2	10	2	0	27	17
Improved pit (VIP and others)	7	11	7	0	35	10
Pit latrine with slab	89	24	86	10	15	10

^a As a share of households with access to improved facilities.

Sanitation Technology Distribution, Unit Costs, and Lifespan

Table A2.3 presents information on the estimated household distribution, costs, and lifespans of key sanitation technologies. These were used to calculate capital investment required to meet national targets.

The distribution of water supply technologies for 2011 were based on an average of the 2006 Multiple Independent Cluster Survey (MICS2006) and the 2011 Lao Social Indicators Survey (LSIS 2011). The projections for 2020 were based on discussions with representatives of Nam Saat and with the Ministry of Public Works and Housing Department of Housing and Urban Planning (DHUP) during a workshop in May 2013 and represent increasing levels of services. The target for urban sanitation -15% of households with improved access being connected to sewerage by 2020 is ambitious but was nonetheless confirmed by DHUP considering that a number of master plans and wastewater treatment feasibility studies were underway as of mid-2013.

The unit costs for pour-flush / flush sanitation connected to sewerage were derived from estimates DHUP cost estimates projected for the city of Savannakhet (ADB feasibility

study). Cost estimates for on-site facilities exclude the superstructure/shelter. Costs estimates for pour-flush / flush connected to tank cost estimates were from a study for the Economics of Sanitation Initiative (Water and Sanitation Program), and costs for pur-flush to a wet pit and dry-pit, were based on costs of toilets currently being marketed in Lao PDR, which is around US\$50 for pour-flush direct to a lined pit with rings, and US\$15-20 for a tiled slab and covered squat-hole.³⁸ Lifespan represents the projected number of years before a facility is fully replaced and is based on expert opinion and discussions with Nam Saat and DHUP staff. All values were confirmed in May 2013 workshop.

User contributions for sewer connections were expected to be around 5%, while on-site technologies were expected to be almost entirely self-funded by households (hence the figure 99%) and in line with the existing National Action Plan that promotes Community-Led Total Sanitation and the limited use of subsidies. Only for rural pour-flush toilets to lined pit, a slightly lower percentage is used, as there is now and will likely be a partial level of hardware support provided to rural poor households (in 2012 rural poverty levels are around 30%). Since there is no coherent subsidy policy for poor rural households, this value should be seen as indicative.

³⁸ Pedi. et al (2012). Development of Affordable and marketable sanitation products in Lao PDR. WSP (2012)

Table A2.4. Anticipated Public Investments (FY 2012/13 - FY2013/15)

Sub-Sector (in US\$ million)	Government domestic	Development Partners including NGOs and private sector	Total public anticipated
Rural water supply	3.9	2.2	6.1
Urban water supply	1.7	18.2	19.9
Rural sanitation	0.0	0.2	0.2
Urban sanitation	0.2	1.3	1.5
Total Capital Investment	5.8	21.8	27.6

Investments

Population projections plus technology distributions, costs, and lifespans are the key ingredients in estimating capital investment needed to reach national targets. To get a sense of how short- to medium-term actual expenditures measure against investment requirements, planned investments of the government, donor agencies, NGOs, and private institutions from 2009 to 2011 were obtained from documents supplied by government agencies, published budgets, and interviews.

Given limitations on time and resources, the SDA investment estimates should not be regarded as in-depth or highly detailed, but a wide view of spending. Apart from the difficulties associated with collecting information from various sources, several other challenges were confronted in the process. The financial model uses information on only hardware costs (for example, construction costs of facilities) and excludes software costs (for example training and awareness programs, project implementation, and operational costs). Moreover, financial information must be disaggregated among the four sectors (that is, rural water supply, urban water supply, rural sanitation, and urban sanitation) and, in the case of multiyear projects, for each year. This disaggregation is usually not readily available, or even known, for projects and data on budgeted amounts and actual spending were also difficult to obtain. The SDA team consulted project funders, implementers, and other experts

as well as examples of similar or previous projects to make informed estimates, that aim to provide a general snapshot and direction of magnitude.

Table A2.4 shows the projected average annual spending of government and development partners, including NGOs from 2012 to 2015. The Lao Government fiscal year is from October 1 to September 31, so calendar year 2010 is assumed to be equal to Lao fiscal year 2009/10; thus the historical information was sought for Lao fiscal years 2009/10 through 2011/2012, although earlier year (2008/09) figures were also available and used in several cases. Any figures for 2012 (Lao fiscal year 2011/2012) investments are preliminary. Lao Government investments were taken from the 2008/09 National Budget (Volume 1) actual expenditures and from published national budgets for 2010/11 and 2011/12, as well as from a host of agency- and Ministry-level budgets and investment summaries. The Ministry of Planning and Investment was especially helpful in identifying planned investments for water supply from its databases. Recent annual levels of investments were calculated using FY2009/10- FY2011/12 data from government and development partners, averaged over these three years. Anticipated levels of annual investment spending, were calculated using the average over the period FY2012/13-FY2014/15.

For rural water supply, funding agencies responding to SDA include the Asian Development Bank, CAWST, Child Fund,

France, (AFD) Poverty Health Action, PLAN, SNV, UNICEF, WHO and through the Poverty Reduction Fund, the World Bank, SDC and development partners participating in the Multi-donor Trust Fund. Many of these are participating through software investment only.

For urban water supply, the largest development partner is China through its loan (forecast at over US\$80 million) for the Vientiane Water Supply Project. Other major partners include the Asian Development Bank, France (AFD), KOICA, and WHO. JICA is also planning an urban water environment project for Vientiane that is aimed at cleaner water in canals (not urban water supply) as well as support for design of water supply extension in Khammoane Province, which does not at this time appear to have a capital spending component

There is little evidence of capital spending for household rural sanitation and hygiene, except for some from Poverty Health Action, but several partners provide software support or have been active in funding school latrines and hygiene education (not counted in SDA financing). These partners include CAWST, Child Fund, Helvetas, JICA, PLAN, SNV, UNICEF, and WHO.

While some capital spending is forecast for urban sanitation, it is in total very small. ADB will fund networked sewerage for Savannakhet, and may subsidize some onsite sanitation, but not after 2014. JICA has funded an urban sanitation and drainage master plan study for Vientiane, but does not forecast capital spending in the near future. No other development partners responding to SDA forecast spending on urban sanitation in the next several years.

The anticipated spending of households is computed by specifying the proportion of investments that the authorities believe households should contribute. This could be an expressed policy, supported by documentation. In the absence of such a policy, however, the approach was to consult experts in the water and sanitation sector. It is through this consultation process that the user shares for urban and

rural water supply were obtained (see table A2.5). In the cases of rural and urban sanitation, the consultation process did not yield clear percentages and the approach used in the analysis is to assume a share that the household is expected to contribute for different technologies based on current sector directions and practices.

Future Estimates of Household Expenditures

The assumed contributions of the households for investments in water supply and sanitation are given in tables A.2.2 and A.2.3 above. Weighted by technology distribution, this assumes the 28% of the capital costs of rural water supply and 59% of the capital cost of urban water supply is born by users, while 94% of the capital cost for rural sanitation and 62% of the capital cost for urban sanitation is born by users, including both new and replacement costs. Thus, the amounts of household expenditures expected in the future were not generated by applying past estimates of household expenditure based on evidence, which often is scarce, nor by assuming that households will certainly pay some percentage in the future.

Instead, in all cases, household investment is calculated based on a leverage ratio whose denominator is public investment (external and domestic). For example, for a leverage ratio of 2:1, for every unit of public capital (hardware) investment (dollar or kip), the household would invest two units. For onsite sanitation, this is difficult to conceptualize because in many countries the government is in fact contributing very little capital. Virtually all the cost of onsite sanitation are borne by the household. However, this does not mean that the households will certainly invest 100% of the requirements in the future; their expenditures need to be mobilized by corresponding 'software' expenditures. In many cases, such software expenditure is inadequate to elicit household investments and the projected 'anticipated household investments' might not fully materialize. Moreover, the high deficits displayed for rural sanitation house-

hold expenditure can be conceptualized as a combination of mainly household (94%) and only little public hardware (6%) (see above weighted user shares for each sub-sector). These amounts would need be elicited in the future with 'software' expenditures such as CLTS programs.

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