

FIDUCIARY RISK ASSESSMENT AND VALUE FOR MONEY STUDY FOR SOCIAL TRANSFER PAYMENT MECHANISMS

in the Lao People's Democratic Republic



Fiduciary risk assessment and value for money study for social transfer payment mechanisms in the Lao People's Democratic Republic

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We hope this report can support the formulation of informed decisions and contracts in the future. If social protection payments can be improved to the benefit of rural people in the Lao People’s Democratic Republic, our goal will have been achieved.

The report was authored by Tim Scheffmann, CEO of LTS Ventures and translated into Lao by Vongdala Vongphachanh.

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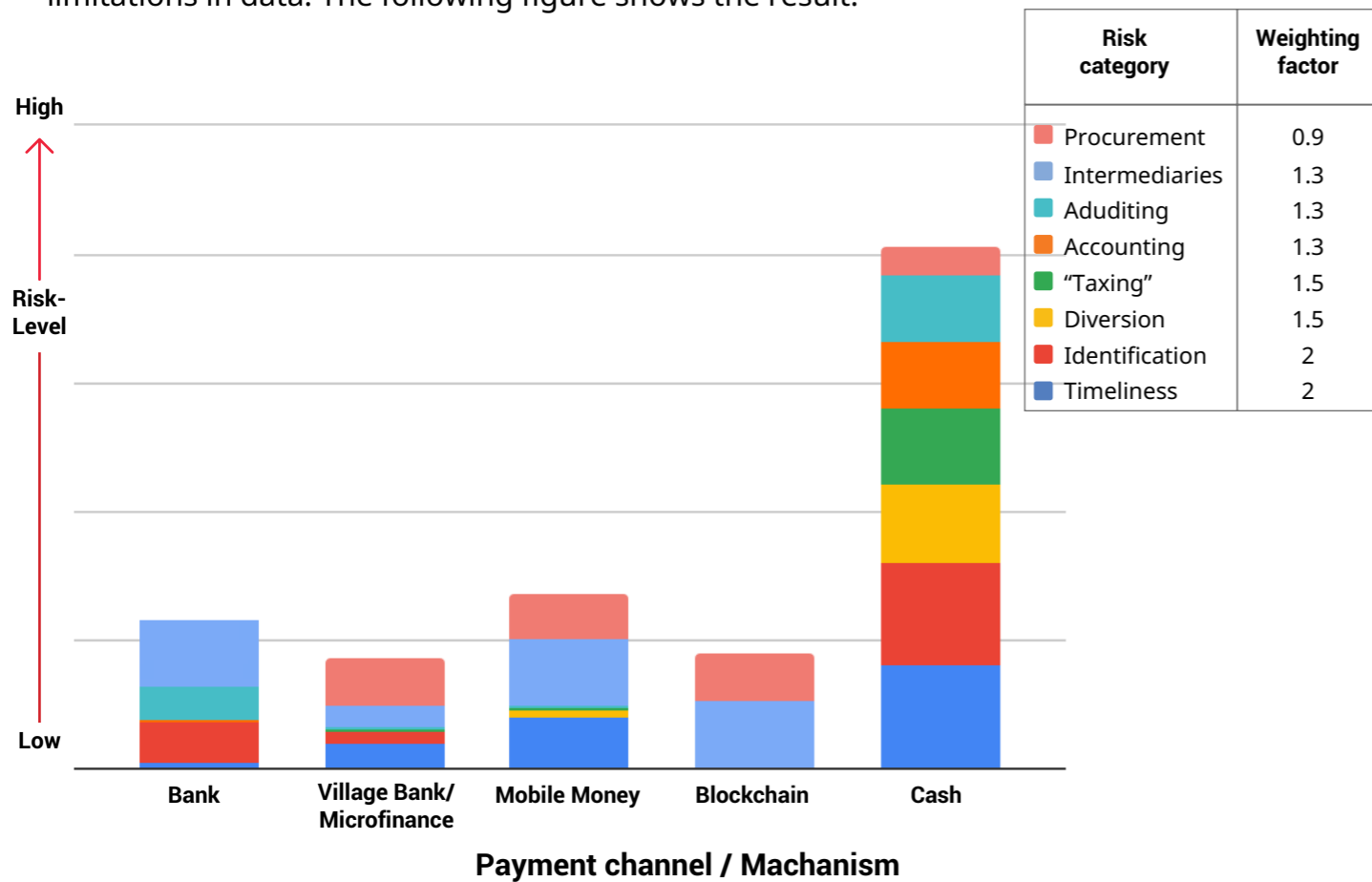
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Abbreviations and acronyms

MECG	Mother and Early Childhood Grant
MFI	Microfinance institution
MOF	Ministry of Finance
MOLSW	Ministry of Labor and Social Welfare
PSP	Payment service provider
UNCDF	United Nations Capital Development Fund
UNICEF	United Nations Children’s Fund

Executive summary

Social protection payments are important for an emerging country like the Lao People's Democratic Republic in order to alleviate poverty and vulnerability among the people. This study looked at five different payment mechanisms and assessed their fiduciary risk level and their value for money. The five channels are traditional banks, village banks/funds (within microfinance), mobile money, blockchain and cash. Eight different fiduciary risk categories were used to assess those distribution channels. Risk was measured in relative terms due to limitations in data. The following figure shows the result:



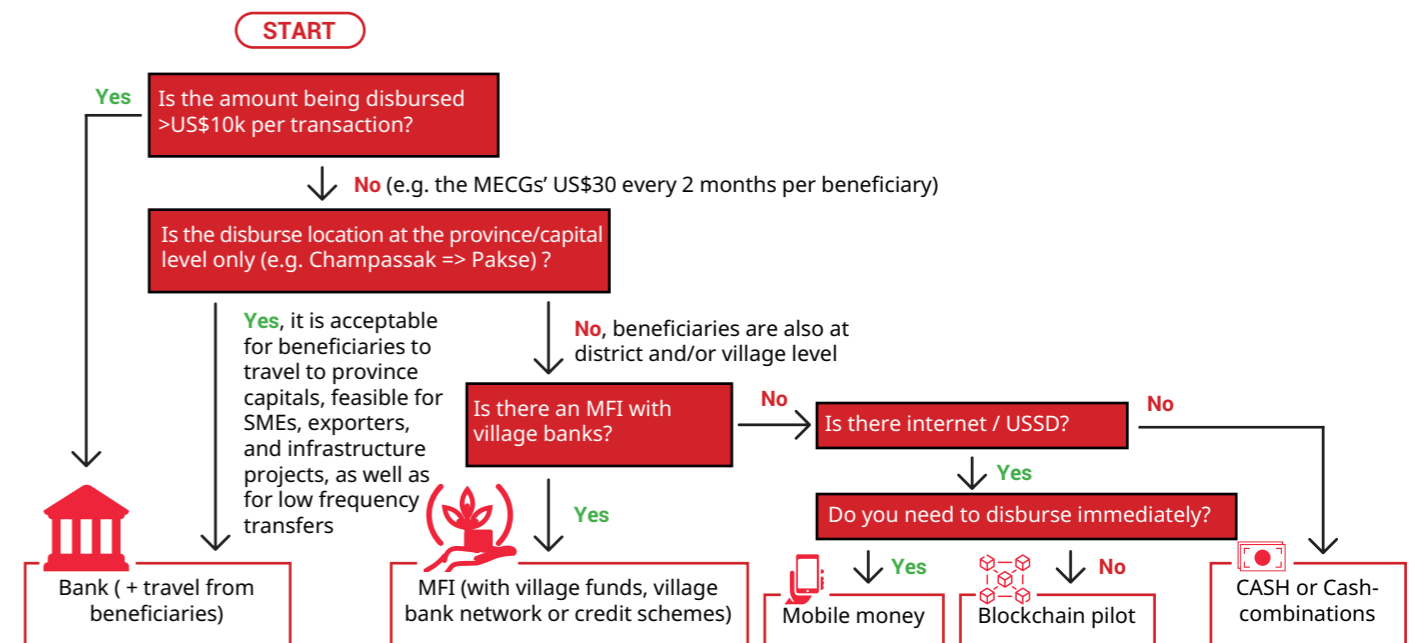
The overall lowest risk is with village banks, since only this method brings money into the village. All other payment mechanisms are, in fact, a combination of the channel itself and a cash disbursement at the last mile. With a village bank that has a proper IT system, money can be disbursed in a cashless manner into the digital account of the beneficiary. Among the estimated 4,000 village funds in the Lao People's Democratic Republic, only 842 are currently using an auditable IT system and database entries.

The solution with the second-lowest risk is blockchain. Though with missing internet coverage and still evolving technology, it is more a candidate for the future. Next in line are traditional banks, who can guarantee traceable records through banking systems, but they basically have no presence in rural areas lower than the district level. Beneficiaries would have to travel and risk traffic accidents and lose time. Mobile money (like M-money or U-money) can be a valid option when there is a functioning and established agent network and beneficiaries have a smartphone and SIM card of the provider. Although cash carries the largest risk, it is often the only viable disbursement mechanism for rural areas.

During interviews with stakeholders, three special risks were mentioned:

1. fraud at the cash-out point of any payment mechanism;
2. a procurement, dependency and sustainability risk for mobile money disbursements; and
3. a technology risk for beneficiaries, who are not used to remembering passwords or who are changing SIM cards frequently depending on promotions by telecommunications providers.

The following decision flowchart can be applied for the Lao People's Democratic Republic:



Note: MECG = Mother and Early Childhood Grant; SMEs = small and medium enterprises; MFI = microfinance institution; USSD = Unstructured Supplementary Service Data

Larger amounts can be transferred via the bank system, as a larger amount may also justify the travel effort required to access it. However, banks are mostly only available at the district level and above (and not at all district levels). The next best alternative is village banks or funds with auditable transaction records, since they can provide a cash-out option at the village level. However, village banks and funds with an underlying IT system are not always available. The next best alternative might be a mobile money disbursement. A mobile money operation, where funds are transferred from one phone to another, needs beneficiaries with mobile phones, internet access and a cash-in/out agent network. The beneficiaries and agents must be trained. Agents must also be audited and honest. In the Lao People's Democratic Republic mobile internet and agents are also not available everywhere; so, for some villages, only cash or voucher disbursements are possible. The blockchain channel is more independent and traceable than mobile money, however, the technology is also fairly new (mobile wallets, cash-in/out procedures). Another key point is that, from the beneficiaries' view point, the preference might be a combination of payment mechanisms. For example, a combination of traditional banks, village banks and mobile money might be preferred, rather than a single disbursement channel. This mixed approach comes, however, with increased complexity and higher administrative costs for the disbursing organization.

1. Introduction and objectives

The goal of the UN Joint Programme "Leaving no one behind: Establishing the basis for social protection floors in Lao PDR" is supporting the Government of the Lao People's Democratic Republic to implement the National Social Protection Strategy 2025. The UN Joint Programme aims to:

- build capacities of the social protection stakeholders and to support the development of a consolidated social protection system;
- create linkages between cash transfers and related services;
- ensure that financing for social protection is on budget and the budgetary system meets international standards;
- bring all this together by building capacities and improving budgetary efficiency, which would contribute to better implementation of social protection, and in turn, use evidence from the pilot of a nationally owned social assistance scheme to inform the former activities and thereby contribute to system development.

The objective of this study is to gain a better understanding of current fiduciary risks associated with "last mile" financial disbursements to rural areas of the Lao People's Democratic Republic. Also, the study makes recommendations for a roadmap to expand the Mother and Early Childhood Grant (MECG) programme to other rural districts of the country. It is also envisioned that these "last mile" delivery mechanisms could be used to support other transfer programmes in accordance with **National Social Protection Strategy 2025** section 4.3, including:

- benefits to pregnant women and children;
- benefits to disability and UXO-survivors;
- benefits to older adults;
- benefits to victims of natural and man-made disasters;
- the National School Meal Programme;
- allowances for students from poor families;
- developing production organization and public services; and
- allowances for vocational training, skills development and technical training.

2. Methodology

Data was collected through semi-structured interviews with the main social protection stakeholders in the Lao People’s Democratic Republic (see Annex 1). Interviews were conducted in-person and via phone, discussing the successes and challenges related to monetary disbursements in the Lao People’s Democratic Republic.

The general methodology of the fiduciary risk assessment study was to:

- interview stakeholders and assess the overall and individual fiduciary risk;
- create a decision tree comparing each of the five distribution channels; and
- make recommendations on disbursement methods for different geographical regions.

2.1. Definitions of distribution methods/channels

Five categories of distribution methods were considered:



Description	Bank	Village Bank/ Microfinance	Mobile Money	Blockchain	Cash
Description	Transfer from one bank account to another	Transfer directly via microfinance institution into a beneficiary account	Transfer via telecommunication company registered mobile accounts	Transfer via a computer network to a smart phone	Handover of bank notes from an organization to beneficiaries
Availability	23 domestic commercial banks with branches in urban areas	4 000 village funds in Lao PDR with 842 well maintained village banks in 6 - 8 provinces	2 providers: Unitel U-money (2/3 G) and Lao Telecom M-money (smart phone apps)	Kasikornbank uses it to settle transactions between Lao PDR and Thailand	Est. 70–80% of transactions are still made in cash, especially in rural areas

Lao PDR = Lao People’s Democratic Republic

“**Bank**” refers to the traditional banking services usually found in urban centres. This includes the government banking system of the National Treasury, Central Bank, and includes accounts at the national, provincial, and district level banks, including commercial banks. Often lump-sum blanket payments would be made to an account at the provincial level, and then this sum is picked up and distributed manually in cash.

“**Village bank**” refers to the system of village banks operating often under the supervision of the microfinance institutions. About 840 village banks and/or funds are using the Lan Xang Banker core banking software to record transactions digitally. The Lan Xang Banker system, through the use of field service representatives, offers offline banking services beyond the reaches of the internet. The field service representatives typically visit remote villages at least once per month, but arrangements can be made for special visits if required. Villagers have bank accounts tied to their personal identification.

“**Mobile money**” refers to digital platforms usually operated by telecom companies, where digital money resides on a mobile phone and is redeemable for goods and services at merchants or can be cashed out at mobile money agents.

“**Blockchain**” refers to peer-to-peer digital money transactions made over a blockchain network, using smartphones or computers. The records of all transactions are recorded on an immutable distributed ledger where the data can be accessed, if permission is granted.

“**Cash**” refers to the physical distribution of cash currency and requires money handlers to collect the cash from a trusted source and deliver it directly to the recipients. Cash is difficult to track, expensive to distribute and can be used for any purpose.

2.2. Definitions of fiduciary risk categories

Eight fiduciary risks have been chosen as a basis and brief descriptions are outlined below. Those fiduciary risks can overlap and occur simultaneously:

¹More information about that software programme can be found at www.LTSVentures.com, which is co-owned by the Bank of the Lao People’s Democratic Republic and LTS Ventures.

Figure 1. Eight fiduciary risks were used as a basis



3. Findings and results

Distributing funds in the Lao People's Democratic Republic is a challenge. The Lao People's Democratic Republic has unique geographical encounters, with low levels of population scattered over large regions of very difficult terrain with poorly connecting physical and technological infrastructure. This challenging situation results in significantly underserved regions due to the associated financial burdens required for reaching a diminishing number of people over increasing geographical distances.



3.1. General findings

Many of the issues in the Lao People's Democratic Republic are complicated by extreme **geographical** constraints, with sparse populations distributed over mountainous and inaccessible terrain. Poor road infrastructure; extreme weather conditions, such as floods or landslides; the rainy season; and COVID-19 have affected the ability to physically distribute funds in a timely manner. These factors also impair the ability to properly audit, obtain feedback, or assess the financial impacts of social protection programmes.

Education, basic mathematics, technological literacy and language problems complicate all fiduciary risks at every level, from the knowledge and understanding of why the programmes exist to the transaction of receiving payments. Even in the most frictionless form of receiving cash money, basic mathematical knowledge of numbers can affect the disbursement and open up fiduciary risks. Education of the end recipient and surrounding community is beneficial in attempting to ensure that funds are allocated in line with expectations from social protection programmes.

Physical risk and road travel **accidents** were identified as a concern by several parties. The beneficiary must make a decision about the opportunity costs to retrieve the money. The decision is dependent upon the value being made available versus the cost of petrol, fees levied by intermediaries, lost working time in the fields, and the danger of traveling.

Some programmes prefer to give **smaller amounts** at regular intervals to ensure that the money will really be used for its intended purpose. This, however, presents a challenge for both the recipient and the service provider. The recipient needs to consider the costs of collecting smaller amounts with the risks of travel accidents and loss of productive time. The service provider is faced with finding cost-effective ways to deliver small payments to multiple recipients scattered over large geographical distances with little or no technological infrastructure and difficult physical access.

Liquidity is a concern that has been expressed by several parties. Rural populations further away from urban centres have less liquidity. PSPs have to compete to make liquidity available. Even with policies and procedures PSP employees are weak in bookkeeping practices.

In **emergency** situations, one-time cash disbursements are preferred; however, the challenges involved include identifying beneficiaries in a timely manner, determining the required amounts, and negotiating a disbursement provider contract.

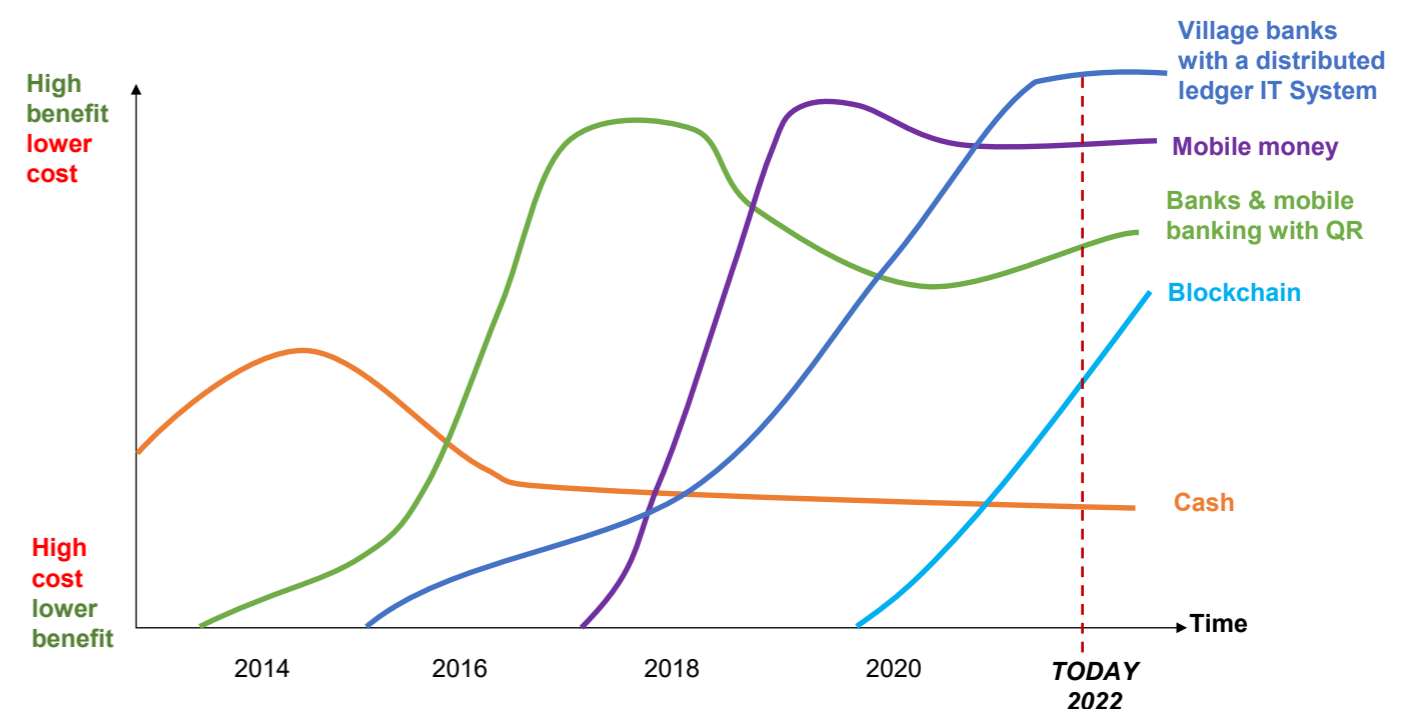
3.2. Findings per channel/disbursement method

The following points must be noted before going into the details of the different channels:

1. Beneficiaries might want a combination of channels.
2. Technologies and their associated costs are developing and changing over time.
3. Often a combination of channels is observed (for example, bank transfer + cash handling on the last mile). Cash-out at the village level requires mobile money agents at the village level or a village bank setup, wherein field staff carry cash into the village as a service.
4. It became clear that "auditability" and "reliability" are very important for the donor community. Some village funds do not yet have a proper, traceable system.
5. In terms of scalability, newer technologies tend to be more supportive. However, in contracting a PSP, inclusiveness must be ensured (for example, they do not only accept customers of one telecommunication company).

The figure below shows the cost/benefit per disbursement method and the dynamic between the various methods both in recent years and into the future.

Figure 2. Cost/benefit of disbursement methods and technologies over time



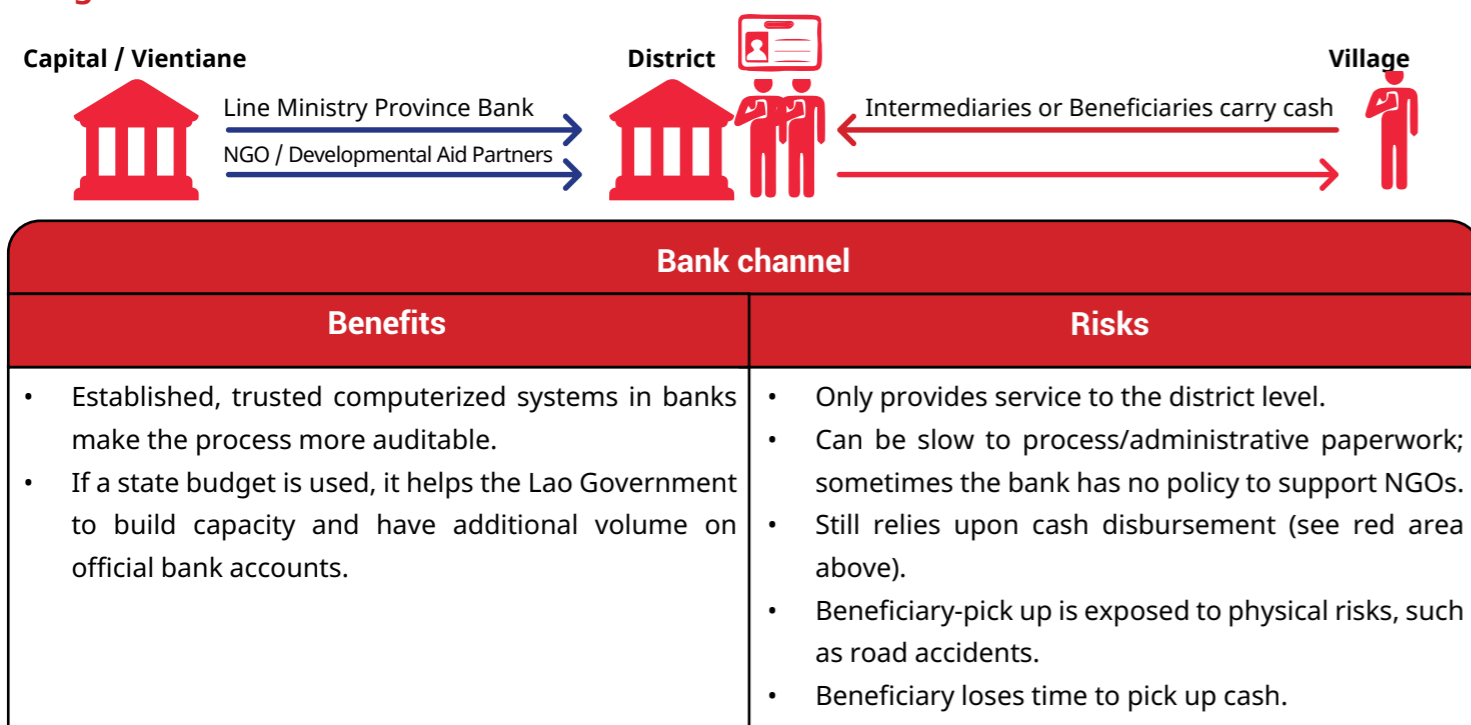
3.2.1. Banks

Banks that have a regional presence are: BCEL, LDB, Agricultural Promotion Bank, Nayoby bank and Accleda bank. Most of the banks are only available in urban environments.



- In the provinces there are about 18 banks present with 148 district offices.
- NGOs often have a partner-contract with the relevant ministries.
- The Ministry of Finance manages the Bank of the Lao People's Democratic Republic treasury account. An NGO will request a transfer, and the Ministry will request the Treasury to approve the transfer amount to a commercial bank (time <1 week).
- Beneficiary or team has to travel to physically pick up money.

Figure 3. Overview of disbursement via the bank channel



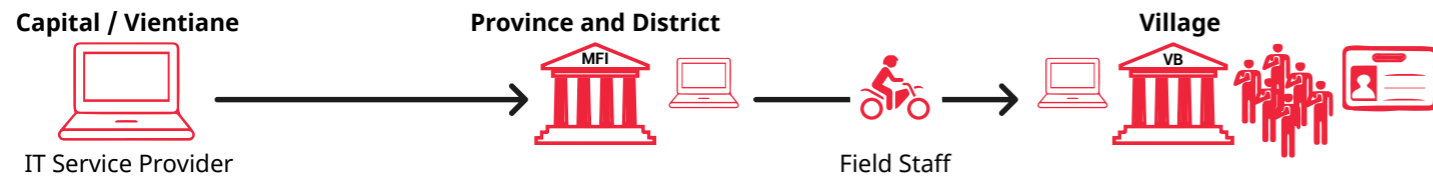
3.2.2. Village banks



Seven microfinance institutions in six provinces have the auditable banking system Lan Xang Banker. It is used in 842 villages to record transactions and manage saving and loan transactions. Field service staff travel to a village at least monthly. Ad hoc services can be arranged with a maximum duration of 3-5 days. Deposit, withdrawal and loan transactions are recorded and backed up daily.

Village banks with an auditable banking IT system (Lan Xang Banker) are operating in: Savannakhet, Champassak, Salavan, Attapeu, Xiabuly (Hongsa and Khopp) and Luang Namtha. Other provinces and districts can be added. Lan Xang Banker is co-owned by the Bank of the Lao People's Democratic Republic and LTS Ventures. The basic version can be used without any costs by other parties, since it was funded by GIZ.

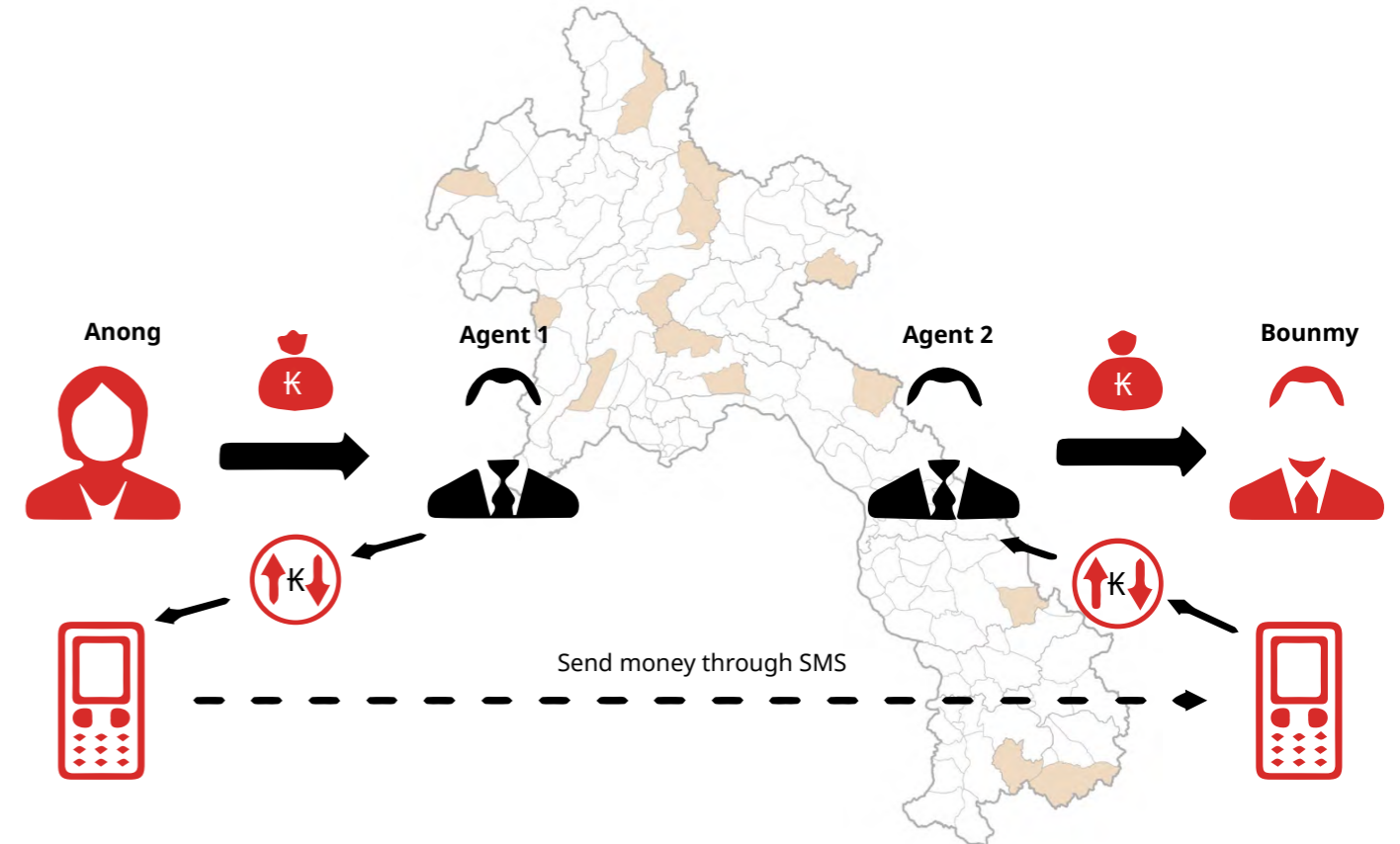
Figure 4. Overview of disbursement via the village bank channel



Village bank channel	
Benefits	Risks
<ul style="list-style-type: none"> Individuals are identified and have microfinance/bank accounts that limit intermediary or diversion risks. Transactions are recorded and can be audited independently. Community-based system to reduce fraud and build fiduciary capacity at the village level. 	<ul style="list-style-type: none"> Auditable system rolled out in only 6 provinces and 842 villages (possibility of extension).

3.2.3. Mobile money

Mobile money is the transfer from one phone to another with a SIM card account, which can be digitally tracked. Mobile money providers are increasing their networks in rural areas on a continuing basis.



- Requires a third-party contract with a mobile money operator.
- Money is sent to the mobile money operator bank account, from there it is sent directly to the recipients' mobile phone. Beneficiary can either spend the "digital money" at a merchant which accepts the "digital money" or must find an agent to cash out (exchange the digital fund for cash). Currently this channel is heavily combined with cash delivery.

If a house has a mobile phone, it is often a shared phone. Many households do not have a phone, with 15–20 per cent giving the village chief's number as their contact number. Also, internet access for the rural population is still costly.

Figure 5. Overview of disbursement via the mobile money channel



Mobile Money channel	
Benefits	Risks
<ul style="list-style-type: none"> At present mobile money operators are subsidizing transaction costs with customer acquisition. Method works for the Lao Government in 11 districts with no bank infrastructure. Mobile money operators show great effort/commitment. 	<ul style="list-style-type: none"> NGO must request data from the mobile money operator to audit. Travel risks for beneficiaries. Counterparty and dependency risk of the mobile money operator. Fraud risk at the agent level. Agent must have liquidity. Expensive internet costs.

3.2.4. Blockchain

Blockchain is similar to mobile money or mobile banking (for example the One-pay app):



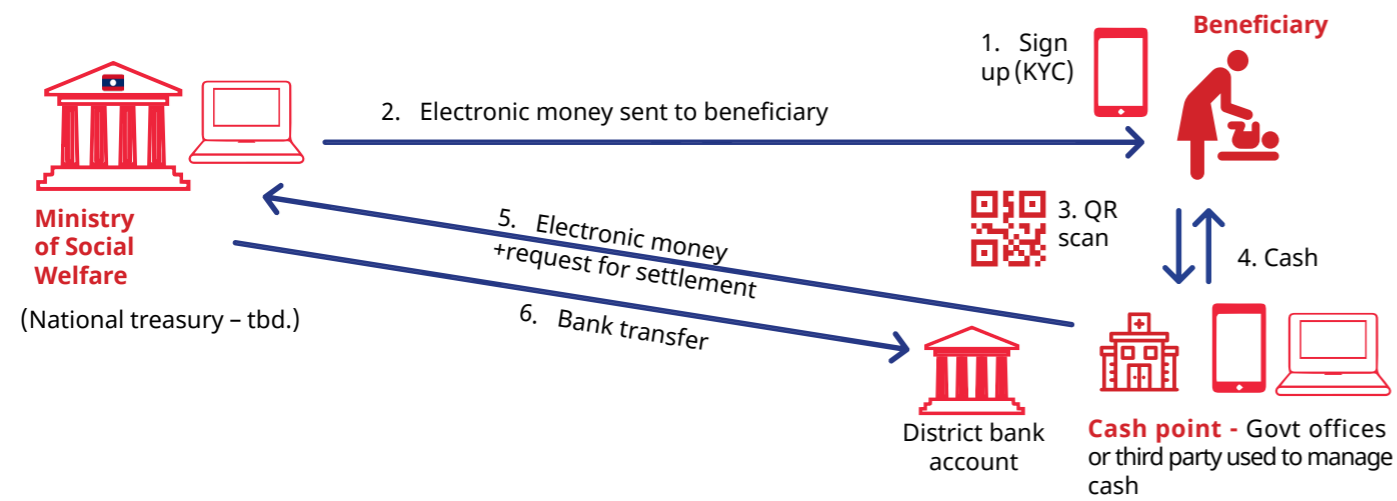
- A secure computer network over which transactions can be made. It can be “programmable money”. Blockchain is not Bitcoin (Bitcoin uses one type of blockchain).
- The Lao Government can run operations.
- Digital money is sent directly to the recipients’ mobile phone. Beneficiary can either spend the “digital money” at an acceptant merchant or must find an agent to cash out.
- Recipients can easily pay by scanning QR codes.

Figure 6. Overview of disbursement via the blockchain channel



Blockchain channel	
Benefits	Risks
<ul style="list-style-type: none"> Lao Government strategically promotes modern payment systems and blockchain to digitize the Lao economy. Lao Government can run, audit and control every transaction and wallet. Acceptance of beneficiaries will be higher through direct disbursements. “Smart contracts” can be used to automate transactions and tax payments. 	<ul style="list-style-type: none"> Internet access and smart phones required. Travel risks for beneficiaries. Fraud risks at the agent level. Agents must have liquidity. Expensive internet costs. Blockchain solution must be developed (which involves costs)

Figure 7. The MECG: An example of how blockchain could work



3.2.5. Cash

- Cash is transferred via the banking system to the nearest branch available
- NGO, government team, or third party takes cash to deliver it to the village (where beneficiaries' IDs must be checked)



Figure 8. Overview of disbursement via cash



Cash Channel	
Benefits	Risks
<ul style="list-style-type: none"> • Cash can be used immediately without any third party involved. • No technology required. • Good for emergencies. 	<ul style="list-style-type: none"> • Fraud risks at bank account/cash-out and village cash distribution. • Fraud risk with false/fake accounts. • Expensive and time consuming to organize cash disbursements. • Difficult to trace and audit transactions. • Limited control how cash is finally used.

3.3. Distribution transfer costs

To disburse money is costly. The higher the degree of automation in the disbursement process, the lower the costs and the easier can disbursements be scaled; however, indirect training costs must be considered as well. Commercial banks and village banks apply a fee for domestic transfers. Mobile money operators are now heavily subsidizing their transfer costs in the hope of gaining further market penetration by onboarding new customers. Blockchain transaction fees are minimal, however, the indirect costs of designing and maintaining the network must be added.

Figure 9. Comparison of distribution transfer and costs for each channel

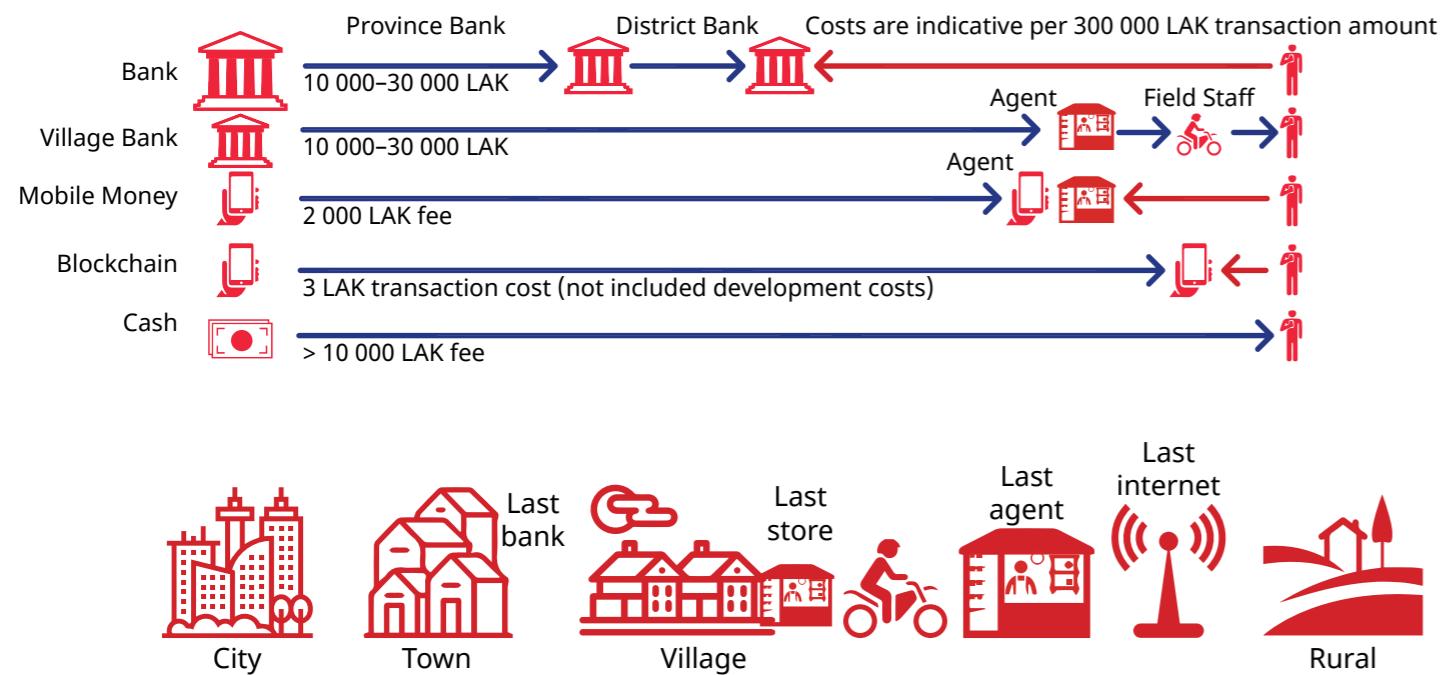
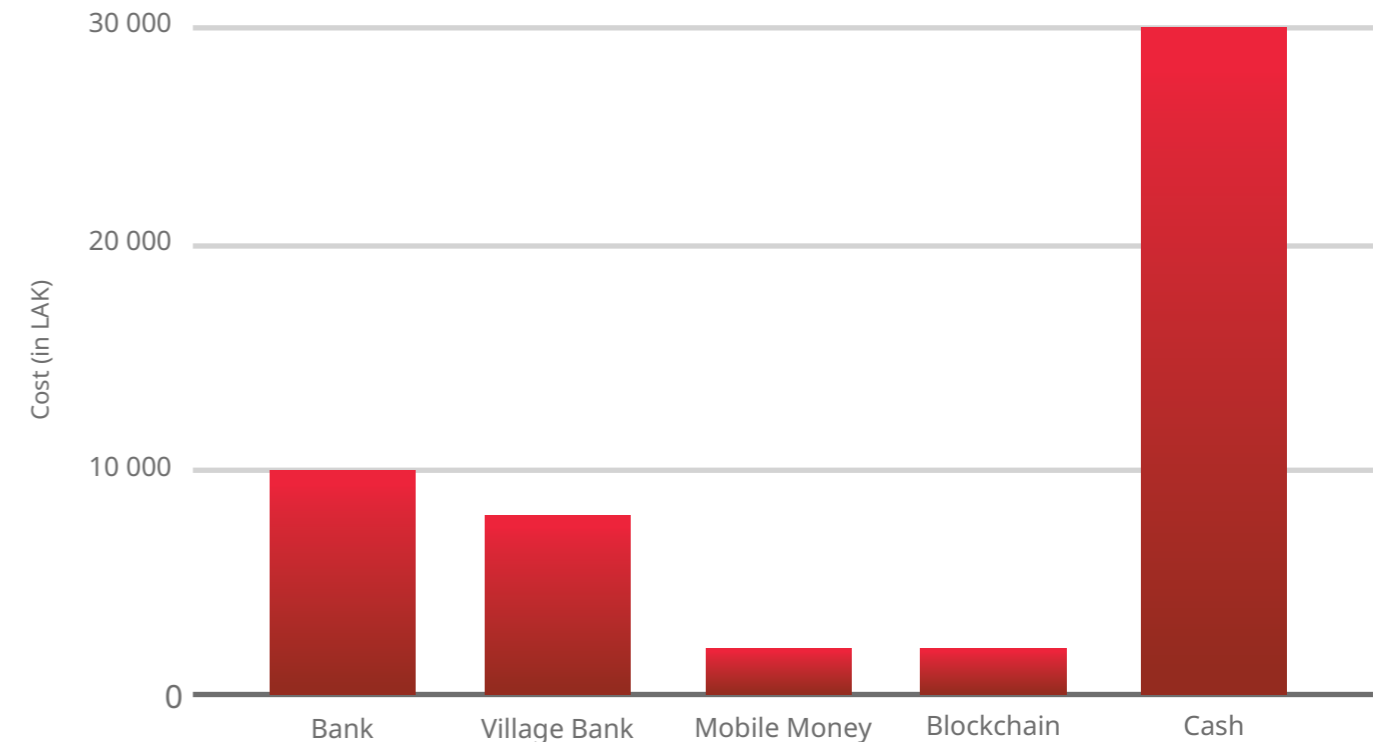


Figure 10. Distribution transfer costs per 300,000 kip transferred, by channel

Transfer Costs



The cost of cash disbursements is typically about 10 per cent of the amount being transferred/ disbursed. Often additional field staff are required for distribution and monitoring. The amounts shown in figure 10 are pure transaction costs and do not cover operational costs, creation/design and maintenance/training costs. For ease of comparison (and to align with the MECG disbursement amounts), a transactional cost per 300,000 kip was used. With the banking, mobile money and blockchain distribution channels, the cost to bring cash to the “last mile” were not included.

3.4. Feedback and findings summarized

Feedback provided from key stakeholders during consultation meetings and the UN joint programme meeting held on 26 April 2022 include:

- Every channel has its limitations – there is no single solution for all villages. The Lao Government’s policy is to modernize and digitize its payment systems.
- If technology is involved, training is needed and should be planned (at the governmental agency, operator and customer levels). It must also be noted that – broadly speaking – most all organizations in the Lao People’s Democratic Republic have limited capacity. The more automated the solution, the better, however, automated solutions are more complex and need higher skill levels to operate. Technology-driven solutions also come with monitoring responsibilities.
- People in rural areas are often overwhelmed by technology-driven solutions and might forget passwords or PINs or they may pass their mobile phones to children or another family member to cash out. Some villagers do not own a mobile phone.
- It must be clear from the beginning who is paying what fees and how high those are.
- Village banks/funds have worked well in the past, because cash is brought into the village and people do not need to travel or learn about new technologies. Checkpoints and auditable systems are required, to ensure control of managers and organizers.
- Financial literacy at the community level is also required for sustainable use of funds. A good approach is to connect financial literacy development with digital systems used.
- Modern digital payment systems also require digital ecosystems, wherein the beneficiary can spend the money at merchants or for other services.

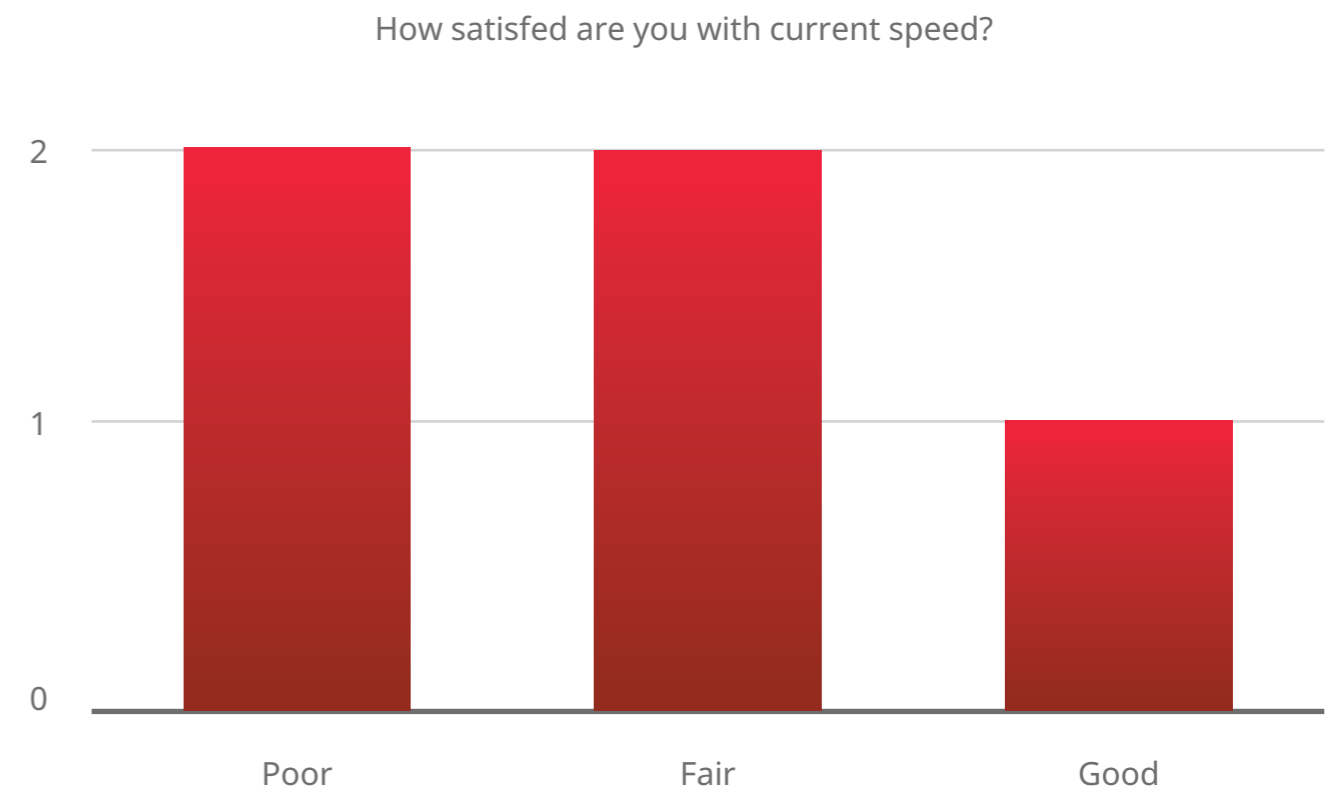
Each programme has its own specific requirements with regard to the amount and frequency of money being disbursed, and each programme will have its own time constraints depending on whether funding will be used as a one-time disbursement for emergency aid or for regular scheduled payouts over longer periods of time used for development aid.

3.5. Findings per risk category

In summary, all risk categories can be summarized under the following categories: Speed, Correct Person, Correct Amount and Auditing Capability.

Speed: Cash disbursements that require physical presence can be delayed for logistic reasons because of rainy seasons or due to COVID-19. Negotiating contracts for PSPs, mobile operators, or cash disbursement teams can also delay payments. However, social welfare payments must be reliable and on time so as to not have negative effects on beneficiaries. Stakeholders are concerned about the current speed of cash disbursements, which may lead in the future to new pilot projects to use more modern technology (such as blockchain) to speed up disbursements.

Figure 11. Satisfaction with current cash disbursement speed



The **Correct Person** category is associated with the lack of a robust countrywide identification system and the “identification of individual beneficiaries”.

The **Correct Amount** category includes the fiduciary risk factors of Diversion, “Taxing”, Intermediaries, and Procurement, which reduce the benefit amount received.

Auditing Capability includes the fiduciary risks of Accounting and Auditing, which are dependent upon accurate and standardized records being kept at every level of the process, and obstacles to the auditing process being reduced or eliminated. It is important for donor programmes to know that their funds have been allocated properly and are being used as intended.

Although most of the risks fall clearly into one of the fiduciary categories, it might occur that one risk leads to another or one risk event impacts two risk categories at the same time.

Table 1. Overview of findings for each fiduciary risk category

Risks	Remarks
Identification	<ul style="list-style-type: none"> • A domestic digital identification system is missing. • Villagers use nicknames and birth dates are sometimes not known (1 January of the approximate year is used in such cases). • Recording errors, omissions and (un)intentional inclusion of dead people increase identification risks.
Diversion	<ul style="list-style-type: none"> • Very difficult to detect. Even with a physical presence during the disbursement process, individuals with local authority can divert or redistribute cash funds or in-kind donations.
“Taxing” Undue Fees	<ul style="list-style-type: none"> • Forms of “cultural taxing” can occur, wherein family members have an expectation of access to money given to another family member. It is also a cultural norm that someone who picks up money for a family member might use some of the money for themselves. • Gender-based violence appears to be a common concern, wherein a family member would take the money through an act of force and then may spend the money on different purposes than the intended ones. • The lower education level of many recipients increases the risk for undue fees to be collected. Beneficiaries are often not educated in financial matters. Language and literacy skills in general create an extra challenge.
Accounting	<ul style="list-style-type: none"> • This is a commonly reported problem. Bookkeeping for payouts and transfers are not being adequately recorded at the payment service provider level for payment reconciliations. • Lack of training for accounting practices and low-level knowledge of mathematics, language and communication add to this risk.
Auditing	<ul style="list-style-type: none"> • Auditing is an important factor for transparency and trust of donors who want to ensure that their money is being used effectively and for the right purposes. Implementation agencies have to prove that this is being done, and often have to organize audits for this purpose. • In Lao PDR it is challenging to conduct a proper audit due to a lack of quality audit companies. Technology, especially blockchain implementations, can improve the auditability of any process.

Risks	Remarks
Intermediaries	<ul style="list-style-type: none"> The traceability of the intermediaries is difficult, and the risk is difficult to assess without speaking directly with the recipients.
Procurement	<ul style="list-style-type: none"> There is a risk of collusion while contracting PSPs. Negotiating contracts to disburse money or to align PSP contracts has also been identified as time-consuming and can be a source of delay. Due to Lao PDR's small market size there is also a procurement risk in terms of dependency on one PSP.

Lao PDR = Lao People's Democratic Republic

4. Possible risk mitigation actions

The stakeholder interviews highlighted many ways to reduce the fiduciary risks for each disbursement channel and some of the key risk reduction actions are identified below.

Table 2. Possible risk mitigation actions

Fiduciary risk	Risk mitigation action
Timeliness	<ul style="list-style-type: none"> Have a single channel and pre-negotiate contracts to save time. Bypass the people who are the bottlenecks.
Identification	<ul style="list-style-type: none"> Deliver funds directly to an account under a single account holder who can be individually identified. Do not use groups or "proxies". Utilize an identification system that is as universal as possible, such as Government ID, "know your customer" requirements for mobile access, or localized village ID certificates utilized in the village banking system. Expanding digital infrastructure will help progress standardized ID systems.
Diversion	<ul style="list-style-type: none"> Deliver funds directly to a digital, traceable account. Communicate as directly as possible with the recipient. Educate people in the transfer chain about the benefits of the programme, why the funds are being sent, and the expected results. Educate the recipients and local people about gender-based violence. Reduce fiat conversion requirements, and promote direct digital exchange for real goods and services or vouchers.
"Taxing"/Undue charges	<ul style="list-style-type: none"> Deliver funds directly to a digital traceable account. Educate the local authorities about the programme, how it will benefit their community, and what is the expected behavior by the local authorities. Dilute the incentive to "tax" by involving more than one person.
Accounting	<ul style="list-style-type: none"> Digitize and automate processes with software that removes human error and reduces reliance on unqualified people who lack the education and skills required to perform essential tasks. Raise the education level of the population to understand basic math and bookkeeping skills.

Fiduciary risk	Risk mitigation action
Auditing	<ul style="list-style-type: none"> Digitize and automate processes with software that removes human error and standardizes the information being audited. Promote digital purchases and exchanges for goods and services. Use proper banking systems wherever possible, with immutable records. Enable third-party audits in a timely manner that could uncover errors or fraud before it becomes too widespread.
Intermediaries	<ul style="list-style-type: none"> Deliver funds directly to an account under a single account holder who can be individually identified. There is no need for an intermediary in this case.
Procurement	<ul style="list-style-type: none"> Use government disbursement channels. Pre-negotiate disbursement contracts, and attempt for standardization between organizations.

5. Recommendations

Due to the nature of the changing landscape of economics, politics, infrastructure and technology, a constant re-evaluation will be necessary. As individual programmes expand, a progressive roll-out is logical, and it would be beneficial for open communication among programmes regarding successes and challenges.

5.1. Disbursement recommendations

In general, the commercial banking system should be used if the amount of money is significant, and if the services are available. The advantage of the village banking system is that individual accounts can be targeted, thus bringing the available money as close to the recipient as possible. However, the village banking system does not have wide distribution across all regions. Mobile money is a good option whose performance has been satisfactory in disbursing money. Cash should be used for emergency situations, or if disbursement contracts have not yet been negotiated. Blockchain solutions are reliant upon smartphone penetration and internet reception, and a pilot project seems worthwhile since a blockchain solution would reduce many fiduciary risks, target individuals without third-party involvement, and automation can offset the financial education otherwise required for people in the disbursement chain.

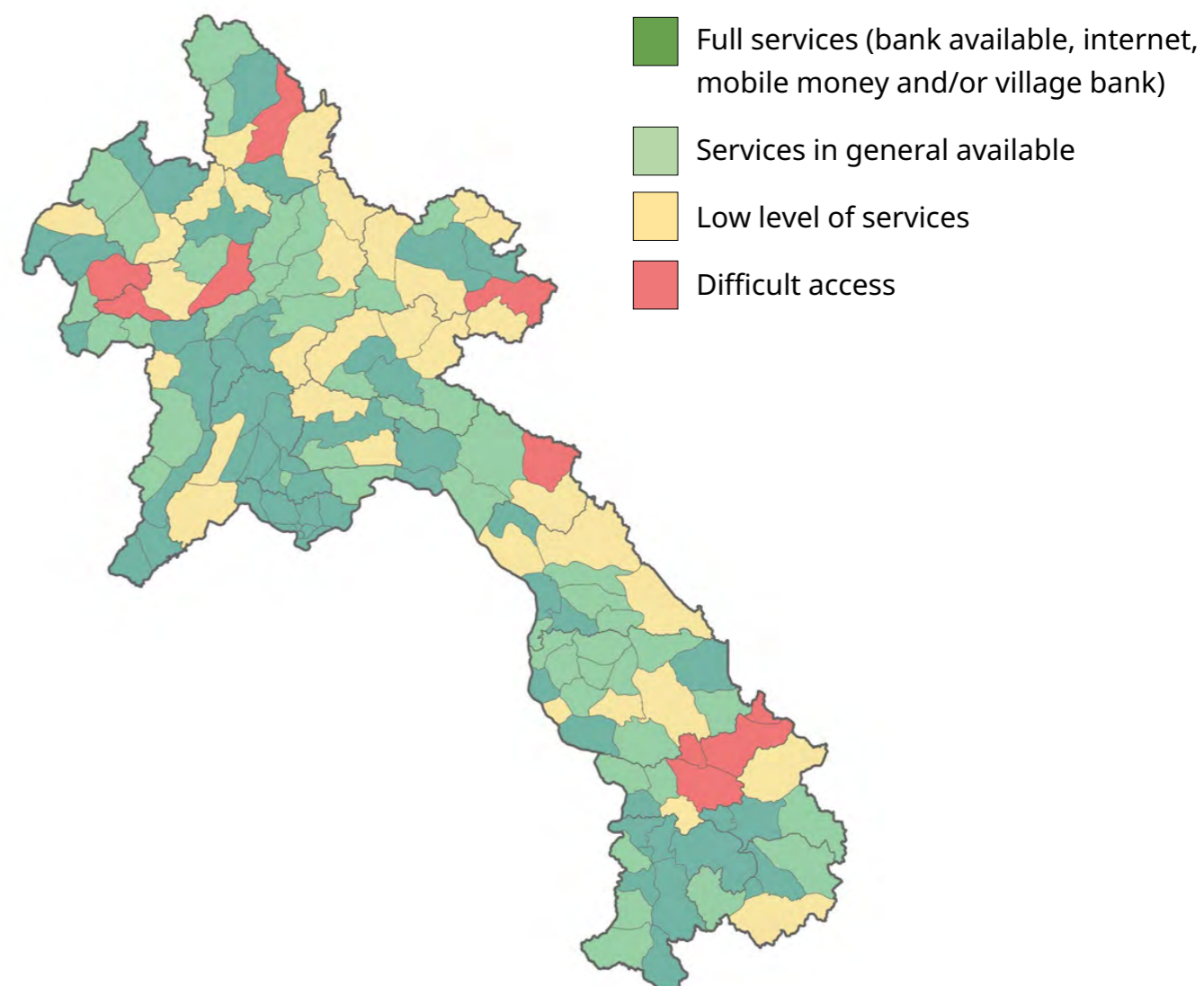
Table 3. Existing disbursement options

Target areas	Availability of:			Existing disbursement options
	3G	Village bank	Bank	
Cities/province level	✓	✓	✓	Traditional bank (for larger amounts); mobile money; village bank/microfinance Institution
Towns/district level	✓	✓	✓	Traditional bank (for larger amounts); mobile money; village bank/microfinance institution
Villages	✓	✓	✗	Mobile money or village bank
Small villages	✗	✓	✗	Village bank
Remote small villages	✗	✗	✗	Cash or mobile money

5.2. Lao People's Democratic Republic services map

The level of available services per district in the Lao People's Democratic Republic are shown on the map below.

Figure 12. Availability of disbursement and financial services in the Lao People's Democratic Republic by district



5.3. Final comment

During the stakeholder meetings the following activities were suggested for future studies:

- It is very important to gather and review the lessons from the pilot MCEG project.
- Often speed is seen as a “given”; however, it would make sense in further studies to challenge the status quos. New technologies like blockchain can achieve greater speeds.
- Further analysis at the village level should be conducted to develop an overall payment service provider strategy for projects and for the Lao Government.
- Financial literacy at the community level is required for sustainability.

The Lao People’s Democratic Republic is developing, technology is accelerating, and the landscape is constantly changing. The end user generally wants access to cash with the least amount of physical or technological hurdles, and it is hoped that the money will be used in line with the goals of the programmes that disburse it. Education about programme goals, expectations, benefits and timeframes will increase the chances of funds being used appropriately and will reduce the fiduciary risks associated with social welfare transfers.

Social protection payments are of utmost importance to ensure decent livelihoods and access to good nutrition and healthcare. In rural areas, this becomes even more important. All stakeholders (the Government, international organizations and private sector) must work in a coordinated way to ensure the best possible synergies and outcomes for the vulnerable population.

Annex 1. Social protection stakeholder list

The stakeholders below were selected to incorporate a broad range of NGOs and institutions, government agencies, and service providers. Each group has different priorities, requirements, restrictions and motivations.

Annex table 1. Social protection stakeholders interviewed

Organization	Name	Title
MOLSW, Planning and International Cooperation Department	Mr Vilayphong Sisomvang	Director-General
MOLSW, Department of Social Welfare	Mr Vongkham Phanthanouvong	Director-General
	Mr Khamsouk	Chief of Division
MOLSW, Lao Social Security Organization	Mdm Keo Chanthavisay	Director-General
	Ms Phengsouk Likaya	Chief of Planning
MOLSW, Cabinet Office	Mr Bounghod Chanthavone	Director-General
	Mr Eanoy Latsavong	Deputy Director
MOF, State Budget Department	Mr Phouvong Kitttavong	Head of State Budgeting
MOF, National Treasury	Ms Vanphone Phommasone	Head of National Treasury
MOF, Accounting Department	Ms Davone Thongchanh	Head of Accounting
ILO	Ms Loveleen De	Programme Manager
	Mr Thongleck Xiong	National Project Coordinator
	Mr Nuno M. Simoes Cunha	Senior Social Protection Specialist

Organization	Name	Title
UNCDF	Mr Paul Martin	Regional Technical Advisor
	Mr Thilaphong Oudomsine	National Project Coordinator
UNICEF	Ms Maryam Abdu	Chief of Social Policy Monitoring and Evaluation
	Ms Amphayvan Chanmany	National Project Coordinator
World Bank	Ms Francesca Lamanna	Senior Economist
	Ms Siriphone Vanitsaveth	Financial Management Officer
	Mr Thongdeuane Nanthavone	Consultant
World Food Programme / Cash Group	Mr Dale Wilson	Climate Risk Management Specialist

Note: MOLSW = Ministry of Labour and Social Welfare; MOF = Ministry of Finance; UNCDF = United Nations Capital Development Fund; UNICEF = United Nations Children's Fund

Further organizations interviewed: Unitel U-Money, Lao Telecom M-Money, microfinance organizations that are in charge of village banks, and the UNICEF team in Savannakhet during their monitoring mission.

Summary of interview questions

The format of the interviews was largely informal, with conversations discussing methods, past successes, past challenges, regional experience, and opinions regarding the current and future situation.

Some of the questions asked were:

- What are your most important programmes, and who are the targeted beneficiaries?
- How many people are being targeted?
- How is money transferred now?
- What amounts are being transferred, and what is the period of transfer?
- How many days does it take to get the money from the source to the destination? What delays have you experienced?
- What are your targeted geographical areas?
- Do you have any literacy information about your target group with respect to reading, writing, mathematics, speaking, language difficulties, mobile phone information?
- What comments do you have regarding the identified fiduciary risks of timeliness, identification, diversion, "taxing", accounting, auditing, intermediaries and procurement? Which is considered the greatest risk?
- How do you feel about the current situation for cost, speed and reliability?
- How important are: speed, correct person, correct amount, auditing ability?
- What would you like to see changed about the current situation?

Annex 2. Calculation methodology

A Risk Decision Matrix was used to quantitatively compare the aggregated fiduciary risks for each disbursement channel. After compiling information from the interviews, assumptions were made to populate the matrix; relative risks were calculated and normalized across each fiduciary risk; and then a weighting factor was applied to finalize the relative risk factors for each disbursement channel.

The unweighted impact of the fiduciary risk is determined by the probability of the incident occurring multiplied by the worst-case incident, using the assumptions as defined above. The risks are calculated by the formula:

$$\text{Risk factor} = \text{Probability} * \text{Impact}$$

Risk calculations with probability and impact assumptions

For each fiduciary risk, the risk factors are relative across each disbursement channel. The data is normalized across each fiduciary risk, with the highest risk being assigned a value of 100, and the lowest risk being assigned a value of 0, with the risks being scaled in between. A value of zero represents the lowest value of risk identified, not a zero level of risk. The following table shows the normalized data.

Annex table 2. Risk ranking of the various disbursement channels for each fiduciary risk

Fiduciary risk	Bank	Village bank	Mobile money	Blockchain	Cash
Timeliness	7	24	49	0	100
Identification	38	13	0	0	100
Diversion	0	0	10	0	100
"Taxing"	0	1	2	2	100
Accounting	6	1	0	0	100
Auditing	48	4	4	0	100

Fiduciary risk	Bank	Village bank	Mobile money	Blockchain	Cash
Intermediaries	100	33	100	100	0
Procurement	0	100	100	100	60
Total	199	176	265	202	660

Interviews with the stakeholders identified that each fiduciary risk was not of equal concern, as shown in the table immediately above. Based on responses from about 30 stakeholders across the Government, NGOs and private enterprises, it was determined that it was of utmost importance that the correct amount of money arrive to the correct person. It was known that being able to audit the process was very important, although in reality, it has often been difficult or impossible to achieve reliable auditing results. Procurement risk, for example, would be considered greater when negotiating contracts with third parties; whereas it would be considered a lesser risk when applied to blockchain solutions since smart contracts would be implemented into that system. Based on these considerations, weighting factors were assigned to each fiduciary risk (annex table 3) and this weighting has been applied to the risk rankings in annex table 4.

Annex table 3. Weighting factors for each fiduciary risk

Risk	Weighting factor
Timeliness	2
Identification	2
Diversion	1.5
"Taxing"	1.5
Accounting	1.3
Auditing	1.3
Intermediaries	1.3
Procurement	0.9

Annex table 4. Risk ranking of the various disbursement channels for each fiduciary risk, multiplied by the weighting factor

Fiduciary risk	Bank	Village bank	Mobile money	Blockchain	Cash
Timeliness	14	47	98	0	200
Identification	75	25	0	0	200
Diversion	0	0	16	0	150
"Taxing"	0	2	2	2	150
Accounting	8	1	0	0	130
Auditing	62	5	5	0	130
Intermediaries	130	43	130	130	0
Procurement	0	90	90	90	54
Total	289	213	341	222	1014

Annex 3. Assumptions for incident and probability criteria

The following table shows two categories of assumptions that were made on how to evaluate each risk. "Incident criteria" defines the maximum worst-case scenario, and the "probability criteria" defines the probability of the worst-case scenario occurring.

Annex table 5. Assumptions for incident and probability criteria

Risk	Incident Criteria	Unit	Probability criteria
Timeliness	Max delay of one payment (days)	Days	x% out of all transactions/ month are delayed
Identification	Money lost for beneficiary or NGO (assume for MECG): 300 000 kip / 2 months = 150 000 kip	People/month	People not having an auditable digital account and/or cannot be clearly identified
Diversion	Money not received or withheld	People/month	x% out of all transactions/ month
"Taxing"	illegitimate taxed amount / Total amount (in %)	People/month	x% of all transactions/month that are illegitimately taxed
Accounting	How much % of total amount is lost	People/month	% of transactions that cannot be audited
Auditing	Factor of money lost due to non-auditability	People/month	% of transactions that cannot be audited
Intermediaries	Factor of money lost on intermediaries (cost of intermediaries)	People/month	No of intermediaries in one transaction (x step process)
Procurement	Money lost due to service failure or undue markups	People/month	People affected by failure of service (day/month)

Annex 4. Assumptions for fiduciary risk per channel

The following table shows the assumptions made in evaluating each fiduciary risk with respect to each method of disbursement.

Annex table 6. Fiduciary risk assumptions for each disbursement channel

Fiduciary risk	Bank	Village bank	Mobile money	Blockchain	Cash
Timeliness	Transfers delayed max of 5 days	Monthly meetings	Capacity of mobile providers is limited	Internet availability assumed	Slow from Vientiane to villages. Fast at villages.
Identification	Disbursements are grouped, not personalized	In villages with a village bank, all people have access (only 6 provinces)	Identification can be done by Lao KYC app and SIM card registration	Research: 1. Internet availability; 2. how many smartphones	Cross reference ID challenging, based on district/village chief
Diversion	Bank account is owned by the beneficiary and not by an intermediary	Beneficiaries own the account; balance is updated centrally	Operator is a private company; most of the transactions are done as cash disbursement	Mobile wallet operator is the Ministry of Social Welfare	Fraud. Many documents and costly approval steps.
"Taxing"	Account is owned by beneficiaries	Account is owned by beneficiaries	Including the cash component of agents	Including the agent cash component	Rate depends on services
Accounting	Bulk transfers cannot be individually distinguished	New village bank IT system has modern accounting system	Mobile money operator runs an internal system (access might be difficult)	Account system of Ministry, no PSP needed	Rely on manual list of cash disbursement entity
Auditing	Bulk transfers cannot be individually distinguished	New village bank IT system has modern accounting system	Mobile money operator runs an internal system (access might be difficult)	Has an anonymized open ledger for everyone to audit	Rely on manual list of cash disbursement entity
Intermediaries	Bank only available down to the district level	System reaches direct from Vientiane to the village	Agent	Agent	Organization of cash disbursement is done in house
Procurement	Long-term established	Smaller organizations	New business	New technology	Depends who is distributing

Annex 5. Risk calculation: Probability and impact assumptions

The table below summarizes the probability assumption values (shown as a percentage value), and the incident assumptions used to calculate the pre-normalized risk values. The lower the risk, the more desirable the disbursement method is.

Annex table 7. Raw data for risk calculation

		Bank	Village bank	Mobile money	Blockchain	Cash
Timeliness	Probability	2	1	3	1	8
	Impact	5	30	20	2	15
	Risk	0.1	0.3	0.06	0.02	1.2
Identification	Probability	20	10	10	10	30
	Impact	2	2	1	1	3
	Risk	0.4	0.2	0.1	0.1	0.9
Diversion	Probability	1	1	2	1	10
	Impact	1	1	2	1	3
	Risk	0.1	0.1	0.4	0.1	3
"Taxing"	Probability	3	3	4	4	20
	Impact	1	3	3	3	30
	Risk	0.03	0.09	0.12	0.12	6
Accounting	Probability	10	3	2	2	30
	Impact	3	2	1	1	15
	Risk	0.3	0.06	0.02	0.02	4.5

		Bank	Village bank	Mobile money	Blockchain	Cash
Auditing	Probability	40	5	5	1	50
	Impact	3	2	2	1	5
	Risk	1.2	0.1	0.1	0.01	2.5
Intermediaries	Probability	2	1	2	2	1
	Impact	2	2	2	2	1
	Risk	4	2	4	4	1
Procurement	Probability	1	2	2	2	1
	Impact	1	3	3	3	4
	Risk	1	6	6	6	4

The data above is presented as raw data. The risk factors can be compared for each fiduciary risk across the different disbursement channels; however, the risk factor cannot be compared across the different fiduciary risks.

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