



SDMR POLICY BRIEF #1

How can a market systems development approach be applied to artisanal and small-scale mining?

Policy issue

Applying market systems development (MSD) to a new area such as the mining sector is a challenge. Yet, the approach offers significant potential to policymakers seeking to understand small-scale mining market systems and identify ways to transform the sector for economic growth, while also improving the lives of impoverished communities.

This brief shares lessons for policymakers wishing to find ways to formalise and support artisanal and small-scale mining (ASM) through market systems development, as well as key considerations and recommendations when doing so. It is an output of the **Sustainable Development of Mining in Rwanda** (SDMR) programme and its research.



What is market systems development?

Market systems development is a framework for understanding and analysing how economic systems work, in order to then improve the way in which they serve the poor. It has been most commonly used in agricultural programmes. In contrast to traditional forms of development assistance, which tend to focus on the state and public-sector programmes, MSD harnesses the power of markets and the private sector.

It does this through first providing a framework with which to analyse how poor people participate in markets and identify where there are both state and market failures in serving their needs. Second, the framework is then used to design programmes and interventions (actions) that work with the wider market system and existing market players to enhance the participation of poor people and the benefit they receive, thereby reducing poverty.

In this way, poor people are seen as active market participants – not just passive beneficiaries – that represent both an underserved market and an underutilised resource with vast social and economic potential. A market which works for the poor expands the choices available to them and produces market outcomes that benefit the target group, in this case, impoverished artisanal and small-scale miners.



Five guiding principles

There are five guiding principles of MSD that policymakers need to be aware of when applying the approach to facilitate sustainable development.

1. **Pro-poor** – A bottom-up approach designed from the outset to benefit the poor such as artisanal and small-scale miners.
2. **Facilitative** – The programme works to catalyse change and support existing market players such as mine equipment suppliers, financiers, and businesses to catalyse the resolution of market failures without becoming a market player itself.
3. **Sustainable** – Supporting change that allows market actors to continue beyond the life of the intervention, for example identifying the incentives for miners to pay for training and finding service providers and business models that can provide it at an accessible and low cost.
4. **Systemic** – Market-wide change that allows for network development with roles for both private and public-sector actors as opposed to just a few miners and other discrete players benefiting.
5. **Scalable** – Through replication, the ‘crowding in’ of other market actors that compete to provide services to miners, and support the wider network development.

The market 'donut' – understanding the whole system before intervening

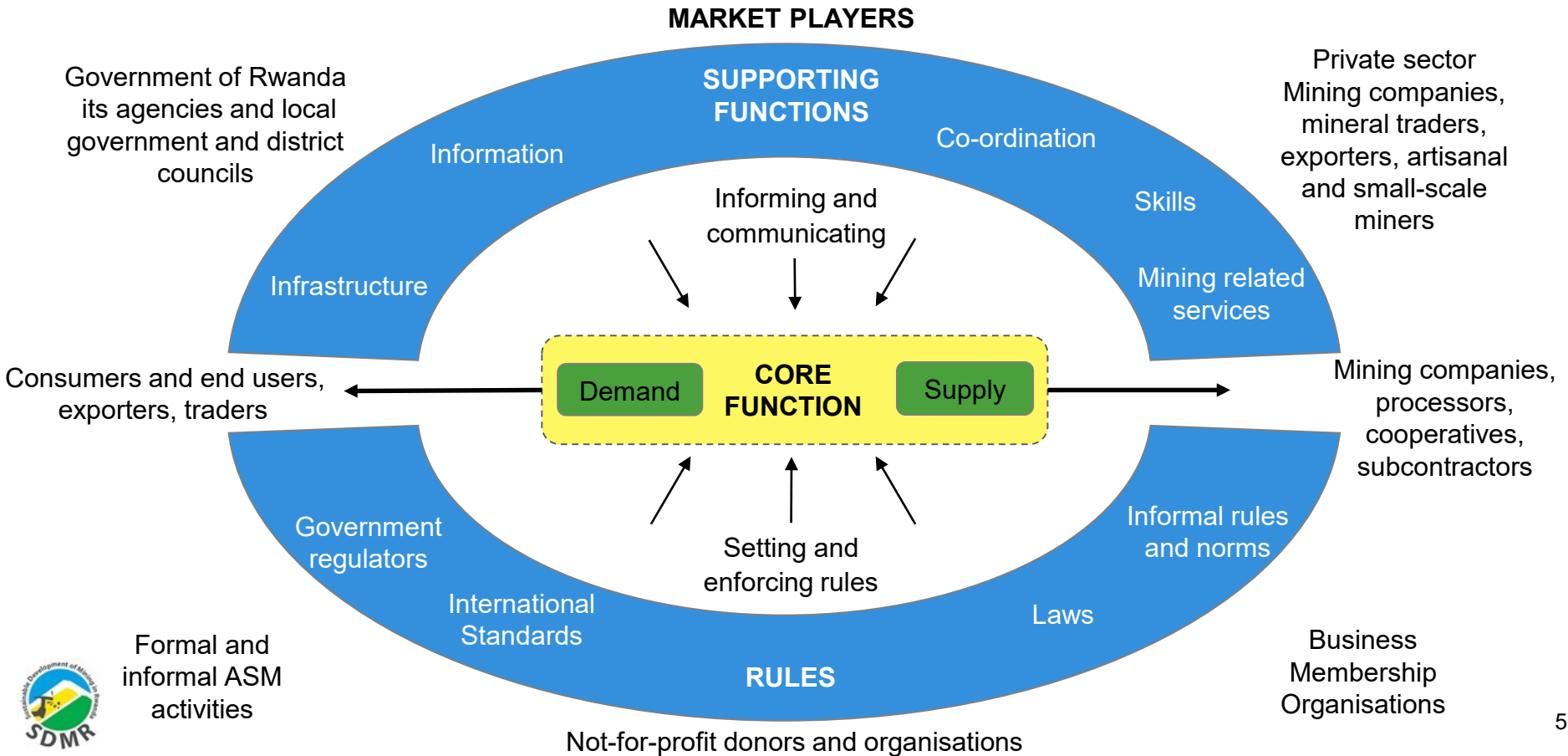
When applying MSD in practice, the first step for policymakers is to use the MSD 'donut' to map the whole system; its core players, supporting functions, and governing rules in order to illustrate and understand how they all interact. The market system is the space within which consumers and suppliers meet to engage in socio-economic transactions through the exchange of goods and services.

The 'donut' is comprised of three main sections, each of which depicts the different aspects of the market system and its players. This is perhaps the most useful feature of MSD for policymakers as it provides a framework with which to fully understand the functioning of the ASM market system and its market failures, before then developing interventions to address them.

While the guiding principles and 'donut' used to analyse and guide the design of interventions do not need to be radically altered for the ASM sector, they must be contextualised to the economic sector as well as the country setting.

So, from SDMR's analyses who are the main market players in the Rwandan artisanal and small-scale mining sector and what is their role? What are the key supporting functions of the various market actors, and where do the strengths, weakness and gaps lie in reaching and benefitting poor miners? And, what are the key formal and informal rules that govern the sector?

Market systems development mining donut



1. Market players

The market players are shown at the core (inner ring) of the 'donut' which focuses on the exchange of goods and services between the different actors along the value chain. The SDMR programme found that the usual market players (commercial, public, and business membership organisations) are also present in mining. Among these, there are three key ASM market players in the Rwanda context that are crucial.

1.1 Government of Rwanda

As in other mining economies across the world, the Government of Rwanda, through the **Rwanda's Mines, Petroleum and Gas Board** (RMB), plays a crucial role acting as the sole regulator of the sector. Over the years the role of government agencies such as the RMB have changed significantly, especially following liberalization of mining across sub-Saharan Africa in the 1980s and 1990s. In Rwanda, the majority of mining companies in the 1970s were state owned and operated a sub-contracting system with large numbers of artisanal operators. This system was inherited from the previous colonial mining companies. With the liberalization of the sector, beginning in 1996/1997 and completed in 2007/2008, all of the state-owned mining companies in Rwanda became privatized, however the sub-contracting system of production was kept intact, and remains largely in place to this day.

Working alongside government, though not the usual approach taken in market systems development, is therefore essential to facilitating long-term change at scale throughout the ASM market system. When looking to implement the approach in other contexts, policymakers must fully understand the role of government in regulating ASM and how past systems of production influence contemporary governance arrangements. They must also be prepared to work alongside government more so than in traditional MSD programmes.

1.2 Business membership organisations

The mining business membership organisations (BMOs) are essential to reaching and supporting artisanal and small-scale miners and improving their legitimacy and dialogue with government to facilitate change.

The main BMOs are the **Rwandan Mining Association** (RMA) and Federation of Cooperatives of Mining in Rwanda (FECOMIRWA) which represent the interests of the formal, licensed and commercial ASM sector. For MSD, policymakers must engage BMOs from the start in order to successfully facilitate sustainable change.

1.3 Artisanal and small-scale miners

In contrast to the usual economic sectors and participants of MSD programmes, artisanal and small-scale mining is a unique sector with a very particular set of challenging circumstances. Policymakers looking to apply MSD to small-scale mining must therefore take much more time to fully understand how the sector is organised. For example, compared to agriculture, the ASM sector across sub-Saharan Africa is largely informal and may often comprise illegal activities; the commodities (e.g. 3Ts and gold) being produced and exchanged are much higher in value and easily lootable; and, the sector is a far more dangerous and socially and environmentally damaging livelihood activity.

In Rwanda, it was found that ASM has a unique supply chain structure with approximately 500 licence holders that often subcontract to small groups and individuals registered as companies or operating somewhat informally. In this way, the licensee is one step removed from activities and essentially transfers the investment and legal responsibility to subcontractors many of whom have limited technical skills, business literacy, and financial means. This can lead to undercapitalization, inefficient mining and processing techniques, and poor safety standards and environmental safeguarding.

2. Supporting functions

The supporting functions shown in the top outer ring of the donut are the ‘tasks’ that the various players perform, such as coordination between different sectors, and the provision of infrastructure, research and development, business services, skills and capacity building, and information. A key benefit for policymakers of applying the MSD approach to ASM is that they can fully understand all of these supporting functions and identify the gaps in the market that need to be addressed.

2.1 Government of Rwanda

The way in which government agencies carry out their functions can either support or hinder the development of the market. In general, while receiving some support, when compared to agriculture the ASM sector has not been a focus of the international development community or national development plans. As such, as elsewhere in sub-Saharan Africa over the past four decades, the Government of Rwanda has received only limited support from international donors and policymakers to improve develop and grow its ASM sector.

However, although SDMR found that this lack of support has been detrimental to the wider development of the sector, it means that there is very little risk that the private sector will be ‘crowded out’ and the market distorted through grants or subsidies from existing donor-funded programmes such as in agriculture and healthcare, as there are simply few, if any, programmes in existence for ASM. This is good from a MSD perspective, but given the fact that there is much work needed to professionalise and formalise ASM, the Government of Rwanda will continue to play a crucial role in providing technical and financial forms of support, and acting as a catalyst to foster increased private investment and help transform the sector.

2.2 Infrastructure

Policymakers need to ensure that the specific infrastructure required for ASM is in place. Many mining activities take place in remote areas with limited infrastructure such as roads, water and sanitation, or energy and equipment services, all of which are needed for the development of a more efficient, productive and socially and environmentally sound mining sector.

At present, infrastructure is provided publically through government bodies such as the Energy Development Corporation Limited (EDCL), the Energy Utility Corporation Limited (EUCL), and Water and Sanitation Corporation (WASAC). Through an MSD approach, policymakers can look to facilitate public private partnerships by linking state institutions together with privately run businesses and demand from miners who in need of low-cost and accessible support and equipment services.

For example, through using the MSD approach, SDMR's (2017) baseline study found that many ASM operations lose up to 70% of the valuable mineral as waste due to poor mining techniques; a significant gap which private service and equipment providers could be facilitated to fill.

2.3 Skills

Capacity building needs to be a key cross-cutting component of an MSD approach to ASM. Both the Government of Rwanda and small-scale mine operators need the necessary skills to work efficiently and effectively.

In the former, despite a relatively robust National Mining Policy (2010), and Strategic Plan (2010-2013) for implementation, it was found that the public sector faces significant capacity constraints in terms of the number of staff, and their level of training and experience needed to better support and shape mining markets. In the latter, many mine operators lack the business, managerial and technical skills necessary to be profitable and sustainable.

Through the MSD analysis, SDMR found that the increased issuance of mining permits in recent years coupled with subcontracting structure has led to the rapid growth of small companies and cooperatives, but that they need training and the support of more experienced mine operators to improve activities (SSAMIR, 2016).

3. Rules

The rules, which are shown in the bottom outer ring of the donut, set the terms by which all market players participate in the system – the ‘enabling environment’.

Policymakers need to know about the formal regulations, guidelines, laws and practice as well as informal practices, relationships between market players, and cultural norms. These shape market performance and functioning, and act to incentivise or disincentive businesses to take part in the ASM sector by determining the extent to which market players can fulfil their roles.

Complying with the rules requires a certain level of mining-related technical training which sets a barrier to entry for many operators. However, like other developing countries, these rules are not always enforced effectively due to limited capacity in the public sector. The MSD analysis identified four priority areas for intervention to improve the functioning of the mineral governance framework (formal rules):

1. Support to finalise the latest version of the National Mining Policy.
2. Updating elements of the mining regime and regulations.
3. Developing a value-addition strategy.
4. Developing a mine rehabilitation and closure bond to cover the cost of returning mines back to normal once deposits are exhausted.

By changing the rules, these interventions will shape market outcomes and govern participation and behaviour.

Recommendations

There are five key recommendations for policymakers who are looking to apply a market systems development approach to the ASM sector in various countries and contexts. These broad recommendations are applicable to the whole market system.

1. Working with the state first, and the private sector second

Instead of a primary focus on the private sector, SDMR's intervention key partner from the start has been the RMB. This is to ensure that the changes to existing regulations and the wider enabling environment, which are key to unlocking the development potential of ASM and facilitating systemic behaviour change, are implemented.

2. Identifying the incentives to engage private sector market players

SDMR found that the incentives for private market players to engage in ASM must first be clearly identified. This need is far greater in ASM than in other sectors due to the perceived higher financial risks involved in the mining sector.

3. Working with the 'right' market players for the 'right' reasons

As with all MSD approaches, to ensure they share mutual objectives, are motivated to engage and invest in ASM as well as share data with and be supported by the SDMR programme, it is important that the private sector partners are self-motivated and not driven by the wrong incentives; for example, the idea that they may receive 'easy money' from being involved.

4. Strengthening the capacity of the private sector to engage with government

It is important that private sector market players are supported to increase their capacity to engage with government. As when applying MSD to other sectors, in ASM it is also important to foster the formation and strengthening of business memberships organisations, link together different players, and provide demand-led training sessions paid for by participants themselves. This will help to organise and strengthen the voice of the private sector in shaping regulatory reforms and policy change processes, and will also ensure the sustainability of interventions as these players will outlast the length of the programme.

5. Though MSD is a technical assistance approach some capital investment may be required

Due to the much greater perceived risks in mining and lack of an existing investment model for market players to follow, when applying MSD to ASM demonstrating the potential returns for private sector investors is key to attracting finance into the sector to increase productivity. This is also an approach sometimes needed in other MSD programmes. SDMR is therefore establishing 'pilot mining services aggregation centres' to demonstrate the feasibility and financial viability of ASM to investors.

Conclusion

A market systems approach can be applied to ASM. In terms of key learnings for policymakers and analysts wishing to apply market systems development to artisanal and small-scale mining, SDMR demonstrated that the approach is indeed a useful tool for analysing the sector and identifying key policy implications.

It has also proved possible to design practical interventions that are in keeping with the framework's core principles.

However, as often is the case when applying tried and tested methods in development to new and far more complex, unique, and context-specific sectors, many more lessons will emerge on how best to implement pro-poor sustainable mining interventions using the MSD approach that can only be learnt through its ongoing application during the programme.



Summary of the SDMR programme

Alongside its main partner the Government of Rwanda's Mines, Petroleum and Gas Board, the three-year (April 2017–March 2020) Sustainable Development of Mining in Rwanda programme, funded by the UK's Department for International Development, is tasked with facilitating the economic and environmentally sustainable growth of Rwanda's mining sector.

It is the first reported attempt of applying market systems development to the mining sector, a concept that is usually associated with agriculture and agribusiness. The programme's objectives are to foster:

1. A more professional, open and transparent mining sector
2. A more efficient and economically viable mining sector, in line with environmental best-practice;
3. Increased level of private investment in the sector
4. Improved incomes of artisanal and small-scale miners.

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