



# A SNAPSHOT OF THE INDONESIAN CLEANTECH FINANCING ECOSYSTEM

ACMFN Flagship Report Series

*BUILD. ACCELERATE. MAINSTREAM.*

A photograph of two women in a rural, hilly setting. They are carrying large, dark, weathered metal buckets on their heads. The woman in the foreground is wearing a light-colored sweater and a white headscarf. The woman behind her is wearing a red long-sleeved shirt and a dark headscarf. They are walking on a dirt path with lush green vegetation in the background. A wooden structure is visible in the distance.

## ABOUT THE REPORT

This report is part of the Asian Cleantech MSME Financing Network (ACMFN) project and was prepared by the project partner adelphi. The project is a four-year project co-financed by the European Union that aims to build and leverage a cleantech financing eco-system to spark improved access to finance for Asian cleantech enterprises and enhance sustainable consumption and production patterns in Asia.

The objective of this report is to gain an insight into the current cleantech financing state in Indonesia, to identify cleantech financing challenges and opportunities and to showcase country-specific successes of the ACMFN project. The insights are useful for all stakeholders working on harnessing the power of financial markets to deliver environmental and societal goals, in particular project donors and financial institutions in Indonesia looking to understand the contours of a fast-growing cleantech financing ecosystem.



## FOREWORD

Perkumpulan Untuk Peningkatan Usaha Kecil (PUPUK) was established in 1979 with headquarters in Bandung and several branch offices in Indonesia. PUPUK develops integrated small business empowerment activities across industries applying value chain development, industrial cluster development, inclusive business models advancement and corporate social responsibility implementation amongst others.

In the last decade, PUPUK has made a lot of effort to support sustainable development in Indonesia. This is carried out with the support and good collaboration with various stakeholders, i.e. donors, the government, private sector, and corporate social responsibility where some of projects also include the European Union through Switch-Asia namely SCOPE Indonesia (2014), PROSPECT Indonesia (2013-2017), and ACMFN as Indonesia National Focal Point (NFP) (2016–present) that supports the development of sustainable consumption and production in Indonesia. In other words, PUPUK has a strong commitment towards sustainable development.

The ACMFN project in Indonesia has been applying a Komunitas approach to strengthen the Indonesian ecosystem across all parties including the government to enable a conducive ecosystem, integrate sustainable financing as a key part of the green economy and strengthen the open collaboration and synergies among all stakeholders. Throughout its activities to support small enterprises, PUPUK applies an inclusive lense incorporating the social and environmental impact as for example through ACMFN, where PUPUK focuses on supporting the Indonesian cleantech MSME financing network.

This project primarily focuses on agribusiness and food processing sector in Indonesia. While cleantech is growing, it became apparent that it is still not easy to make the switch of MSMEs to use cleantech happen.

We would like to thank BRI, BJB, hand-holding, 1000 Gardens Community/Komunitas 1000 Kebun, AIKMA, Green Citarum, Greenhope, TPKAD - OJK Regional Office of West Java, Paronpong.id, KHH, KOI Bandung chapter, PARANTI Composter, Malai Padi Coop, PT PNM, Mekar, Melania CU, KOGAMA, YRE -BIRU, Digitaraya, UnLtd Indonesia, Diet Plus and all those who cannot be mentioned one by one who have been willing to take part in interviews for the ACMFN Flagship Report Indonesia, your contribution is valuable.

With this Flagship Report, we hope that the development of a green ecosystem through the Komunitas approach is recognised as an effective joint strategy in an inclusive collaborative movement. Finally, we invite all relevant parties to jointly and synergistically support the development of the green economy, especially in the cleantech sector in Indonesia.

**Rieta R. Dewi**

Chairperson, Perkumpulan Untuk Peningkatan Usaha Kecil (PUPUK)

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# LIST OF ABBREVIATIONS

<b>ACMFN</b>	Asian Cleantech MSME and Financing Network
<b>CP</b>	Cleaner Production
<b>CSR</b>	Corporate Social Responsibility
<b>CT</b>	Clean Technology
<b>EU</b>	European Union
<b>ISFI</b>	Indonesia Sustainable Finance Initiative
<b>KUR</b>	Kredit Usaha Rakyat
<b>LCDI</b>	Low-Carbon Development Initiative
<b>MSMEs</b>	Micro-, Small- and Medium-sized Enterprises
<b>NBFIs</b>	Non-Banking Financial Institutions
<b>NFP</b>	National Focal Point
<b>NDC</b>	Nationally Determined Contributions
<b>GDP</b>	Gross Domestic Product
<b>PNM</b>	Permodalan Nasional Madani
<b>PUPUK</b>	Perkumpulan Untuk Peningkatan Usaha Kecil / The Association for Advancement of Small Business
<b>P2P</b>	peer-to-peer
<b>SDGs</b>	Sustainable Development Goals
<b>YRE</b>	Yayasan Rumah Energi



# 1. EXECUTIVE SUMMARY

This flagship report provides a country snapshot of the cleantech MSME financing situation in Indonesia. It highlights country-level project successes of the Asian Cleantech MSME Financing Network (ACMFN).

## KEY FINDINGS

### *Recent achievements & trends*

- The cleantech market in Indonesia is rarely developed to date but bears a high potential for growth.
- Key drivers for Indonesia's cleantech MSME market is increasing interest and awareness of sustainability throughout the whole society and supportive governmental policies.
- The availability and application of clean technologies in Indonesia is low due to a lack of cleantech awareness, limited knowledge about clean technologies and limited funding available for cleantech MSMEs.
- The most popular cleantech sectors are land & air quality and waste management in line with Indonesia's strong agricultural focus and waste challenges. Other sectors remain underrepresented in the ACMFN cleantech universe.

Overall, the most applied clean technologies can be categorised as "low-tech".

- ACMFN's MSME engagement approach leveraging the local Komunitas has proven successful in supporting enterprises based on their needs.
- ACMFN added great value by initiating the first local cleantech financing ecosystem.

### *Challenges*

- Investment directed towards cleantech MSMEs is still very low.
- Financial institutions tend to focus on financial instruments targeted to MSMEs but do not yet respond to the specific financing needs of cleantech MSMEs.
- Cleantech MSMEs have to compete with profit-driven enterprises for generic financial instruments.
- Cleantech MSMEs depend on self-financing especially to cover the high development costs of clean technologies.
- There is a great need for support services for MSMEs to access finance, especially the combination of financial and non-financial support, as well as cleantech expertise.

To date, the number of cleantech-focused intermediaries is limited.

The Indonesian cleantech MSME financing market is gaining traction and large potentials exist which need to be tapped into to boost cleantech investments and contribute to green growth in Indonesia. ACMFN has been part of this journey in recent years, and project successes need to be leveraged to transform current challenges into opportunities.

ACMFN stakeholders jointly need to support cleantech MSMEs to maximise their impact potentials:

**Financial institutions** should

- Broaden knowledge base about clean technologies and resource saving potentials
- Develop targeted cleantech financing instruments for example through blended finance

**MSMEs** should

- Raise awareness and education on cleantech through innovative business models
- Promote government incentives and support for cleantech initiatives to build the demand for cleantech

**Intermediaries** should

- Foster cross-actor collaboration for cleantech education
- Leverage the power of intermediaries to spread the cleantech movement on the local level

The task is now to take these actions to scale to maximise cleantech MSMEs' contributions to Indonesia's sustainable development path.

## 1.1. Project Background

The Asian Cleantech MSME Financing Network (ACMFN) is a four-year project co-financed by the European Union that aims to build and leverage a cleantech financing ecosystem in China, India and Indonesia to spark improved access to finance for Asian cleantech enterprises and enhance sustainable consumption and production patterns in Asia.

ACMFN carries out capacity-building measures for more than 400 Micro, Small and Medium-sized Enterprises (MSMEs) in the three target countries via workshops, advisory and training services in order to provide enterprises with the knowledge necessary for raising capital for cleantech, as well as via national forums for matchmaking processes between MSMEs and financial institutions. The project also provides technical assistance to financial institutions in order to strengthen understanding of the economic and environmental benefits of cleaner production and green technologies. Ultimately, the goal is the expansion of MSMEs lending portfolio benefiting of peer-learning, co-investing and matchmaking opportunities.

### Intro to ACMFN Indonesia:

In Indonesia, ACMFN is hosted by PUPUK, Perkumpulan Untuk Peningkatan Usaha Kecil, the Association for Advancement of Small Business. PUPUK is an independent and non-political non-profit organisation established in 1979 with headquarters in Bandung and offices in Jakarta, Surabaya, Yogyakarta, Tegal and Makassar. PUPUK stands for the interests of small businesses. PUPUK develops integrated small business empowerment activities across industries applying value chain development, industrial cluster development, inclusive business models advancement and corporate social responsibility implementations amongst others. Throughout its activities to support small enterprises, PUPUK applies an inclusive lense incorporating the social

### Major achievements of ACMFN in Indonesia since the project's start in 2016 include:



**Supporting 238 MSMEs directly and more than 1000 MSMEs indirectly to go green and access financing**



**Mobilising of key financial institutions for MSME cleantech financing, e.g. MoU with Bank BJB signed in 2017**



**Leveraging financing to green MSMEs of more than 600,000 Euro for cleantech and business development**



**Facilitating a green ecosystem in Bandung with all key stakeholders collaborating at Green Bandung Festival**



**Supporting the establishment of five new green enterprises in the cleantech value chain**

and environmental impact as for example through ACMFN, where PUPUK focuses on supporting the Indonesian cleantech MSME financing network.

Through its activities and networks, PUPUK continuously develops and improves its activities for Indonesian MSMEs to access financing for cleantech enterprises and contribute to the development of green small businesses in Indonesia.



## 1.2. Methodology

The *ACMFN Flagship Report Indonesia* provides insights into the status quo of cleantech financing for MSMEs in Indonesia by highlighting the project’s successes, but also drawing up the path for urgently needed developments to foster cleantech beyond the project’s time scope. This report relies on the collection of quantitative and qualitative data obtained through in-

depth interviews with key project stakeholders and experts within the Indonesian cleantech MSME context. The interviews covered a broad range of categories to map the Indonesian cleantech MSME financing landscape in terms of stakeholder’s motivations for cleantech engagement, general opinions of the Indonesian cleantech market trends and development, and to find out about available cleantech financing instruments. The interview outputs were analysed along with first-hand experiences gained throughout ACMFN activities both on national and local level. Secondary research was used to compliment the collected primary data.

ACMFN stakeholders can be categorised into three broad groups: **MSMEs, intermediaries and financial institutions.**

In Indonesia, according to the Ministry of Co-operatives and SMEs (National Law 20/2008), the definition of MSMEs is based on assets and revenues. Additionally, the Central Bureau of Statistics offers a MSME definition based on employees numbers. Accordingly, an enterprise is defined as a micro-enterprise if it has less than IDR 50 million (ca. USD 3.600) net assets and less than IDR 300 million (ca. USD 21.500) annual revenues and employs 1-4 staff members. **Small enterprises** have less than IDR 500 million (ca. USD 36.000) net assets, less than IDR 2.5 billion (ca. USD 180.000) and employ between 5-19 people. **Medium enterprises** have less than IDR 10 billion net assets (ca. USD 715.000), less than IDR 50 billion (ca. USD 3.5 million) annual revenues and employ between 20-99 staff members<sup>1</sup>.

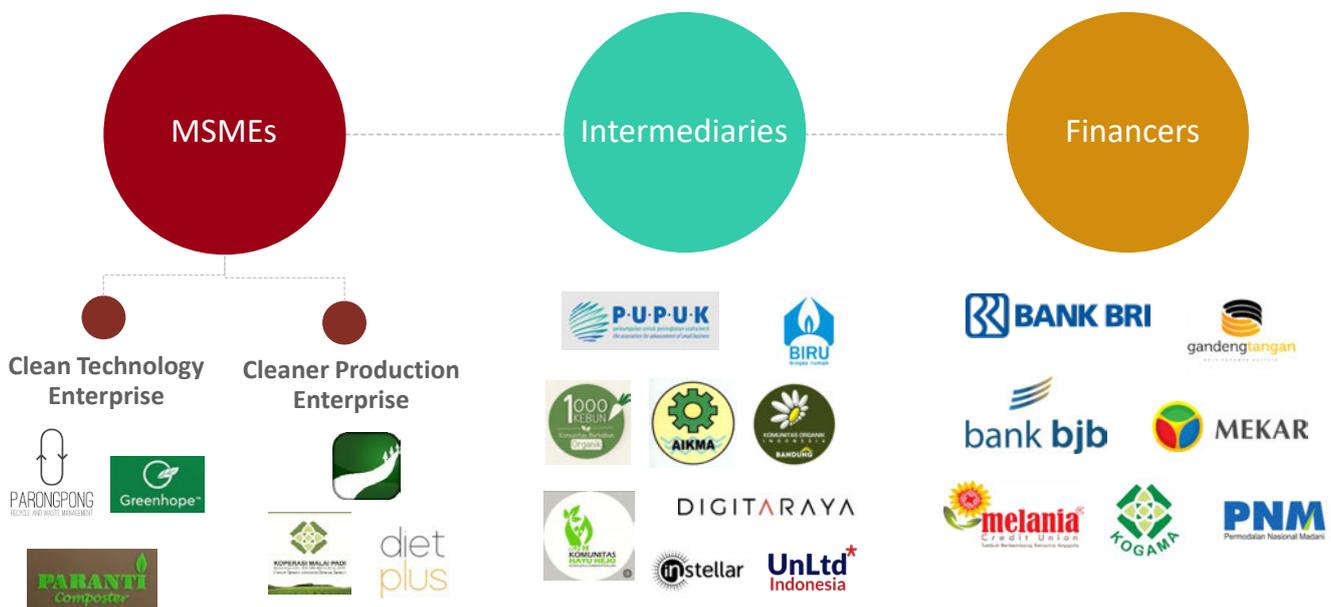
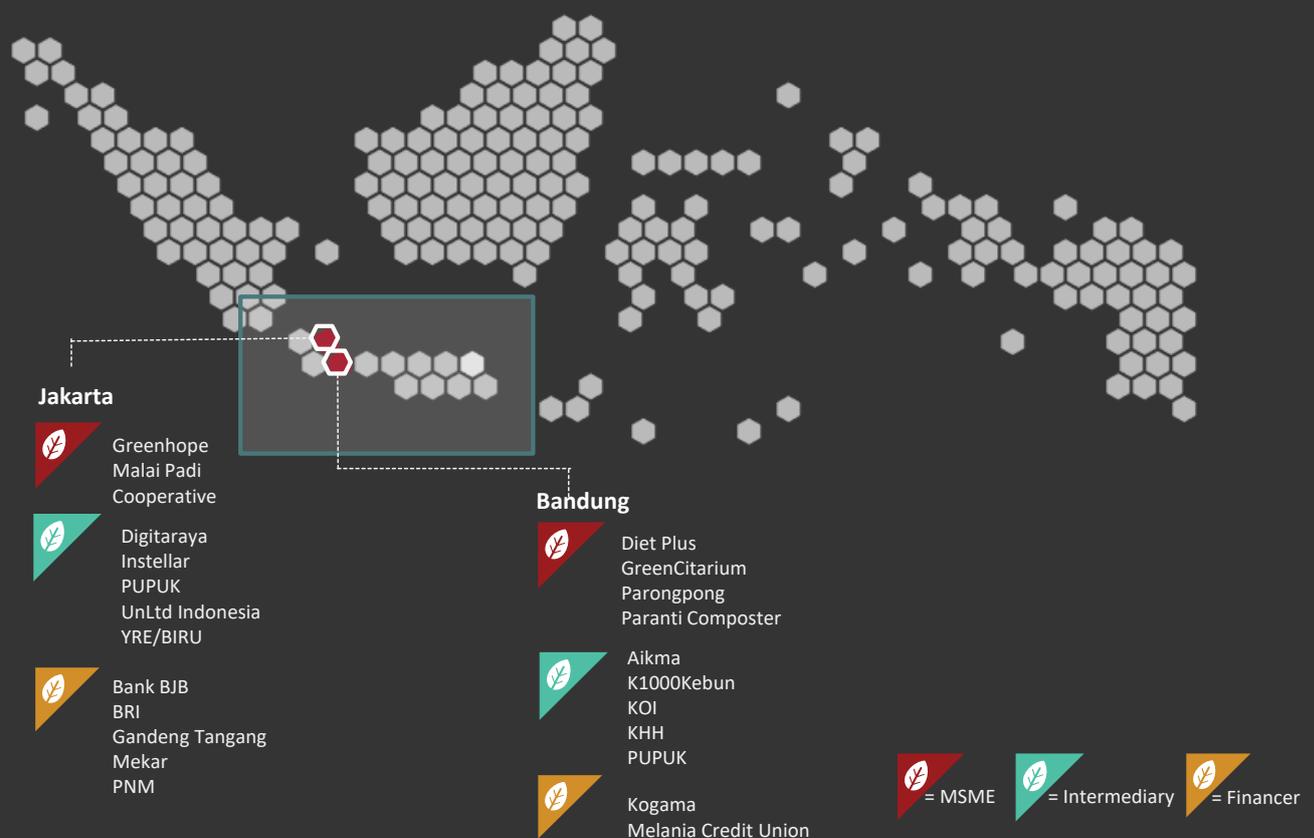


Exhibit 1: Stakeholder Mapping

For this report, **six MSMEs, nine intermediaries, and seven financial institutions** were analysed in-depth and interviewed. These stakeholders were carefully selected to 1) include active ACMFN partner organisations, 2) reflect the ecosystem by including additional experts and key players not yet involved in the network and 3) to cover a variety of topics, organisation types and expertise within the stakeholder categories. The stakeholder selection reflects broad-based on-the-ground realities within the cleantech financing ecosystem in Indonesia.

## Stakeholder Portfolio

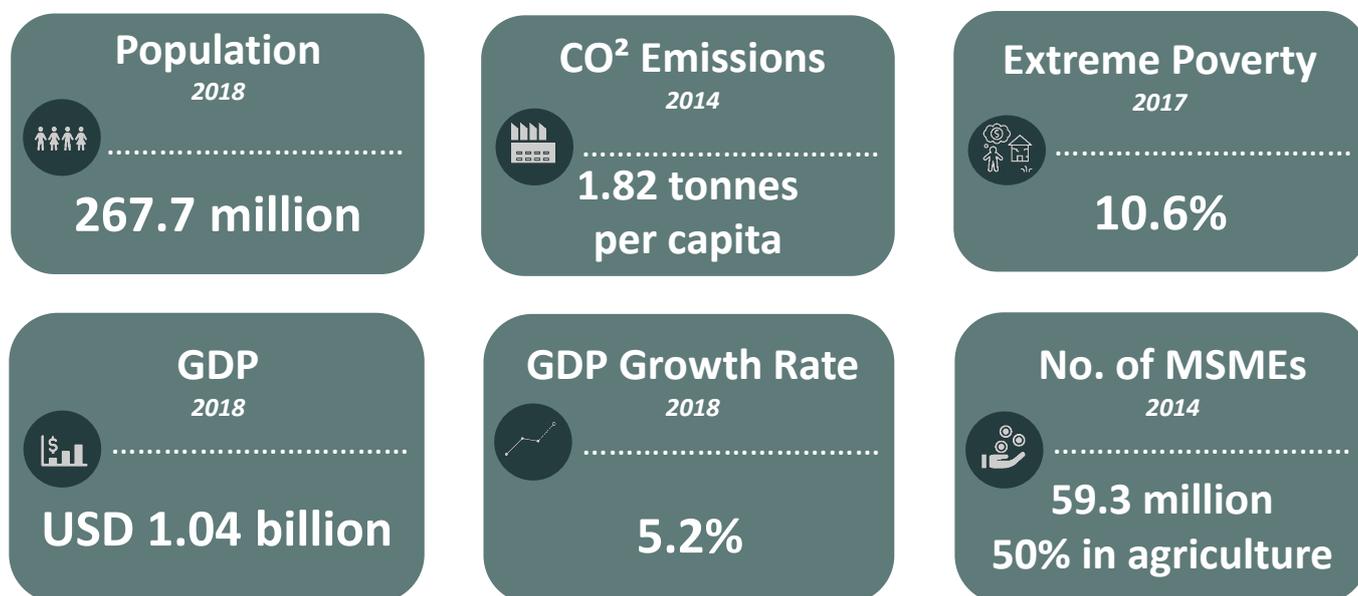


### Exhibit 2: Stakeholder Portfolio

**Indonesia's cleantech movement is spread across Java with centers in Jakarta and Bandung.** As typical for a country's capital, Jakarta attracts an innovative MSME ecosystem with enterprises, intermediaries and financial institutions. Most banks which have branches throughout the country have their headquarters in the capital Jakarta. Bandung forms the second cleantech hub next to Jakarta. As the fourth largest city in Indonesia, Bandung is West Java's center of business, industry and innovation. The majority of MSMEs and intermediaries that PUPUK is working with are located in Bandung. Overall,

the two innovation centers Jakarta and Bandung are central drivers for fostering cleantech and channeling financing to MSMEs, and thus are the hot spots for ACMFN's project activities in Indonesia and the center of the local cleantech MSME financing ecosystem.

### 1.3 Zooming in: Cleantech in Indonesia



#### Exhibit 3: Indonesia Quick Facts

Indonesia, an archipelago of more than 17,000 islands is the largest economy in Southeast Asia with a GDP of more than USD 1 trillion<sup>2</sup>. With its growing population, rapid urbanisation, expansion of the middle class and large young population with the potential to boost growth exponentially, the pressures on the Indonesian environment are substantial. Especially in terms of a resulting increase in energy needs and growing waste and pollution issues affecting land, air and water are compelling. For example, coping mechanisms for a sustainable land use will be key for Indonesia's agricultural based economy, as well as initiatives against air pollution both within the megacities and rural areas resulting from forest fires are needed. In 2017, Indonesia's CO<sub>2</sub> emissions were 486.84 million metric tonnes in 2017<sup>3</sup>, pending at around 1.82 tonnes per capita<sup>4</sup>, comparable to India at 1.6 tonnes per capita. Alone 80% of CO<sub>2</sub> emissions stem from the forestry sector and coal-based energy generation making Indonesia the largest emitter of forestry-related industry emissions leading to high levels of global attention<sup>5</sup>. Deforestation, forest degradation, peat decomposition and peatland fires are major concerns with deforestation for palm oil alone contributing 7% to the global tree cover loss<sup>6</sup>. Thus, in order to curb CO<sub>2</sub> emissions and solve related social and environmental challenges, cleantech is more relevant than ever for Indonesia's sustainable development and to ensure its resource- and biodiversity richness.

**Cleantech refers to products, services and processes that reduce or eliminate negative ecological inputs, improve the productive and responsible use of natural resources and provide superior performance at lower cost.**

#### Cleantech Policy Context: Sustainable Development Commitments

Indonesia has set up a framework of supportive policies and actions to enable the transition to a low-carbon economy. In line with the global Sustainable Development Goals (SDGs), Indonesia has announced its Nationally Determined Contributions (NDCs) to reduce carbon emissions by 29% below the business-as-usual by 2030 or up to 41% conditional on international support. While the first five years after ratification of the Paris Agreement focus on setting up the enabling environment, more ambitious goals are said to follow beyond 2020 according to the NDCs. On the national level, the Ministry of National Development Planning launched the Low-Carbon Development Initiative (LCDI), to put the country's sustainability objectives into action<sup>7</sup>. The LCDI focuses especially on the emission-heavy energy and land use sectors to achieve the NDCs. For example, the productivity of existing land should be enhanced as opposed to clearing forest land for agricultural purposes and renewable energy should be promoted. For both sectors, cleantech offers highly relevant solutions in order to

achieve these objectives. Overall, sector-specific policies and initiatives related to cleantech have been put in place such as the National Solid Waste Management Policy and Strategy aiming to reduce 30% of waste by 2025 and the Biodiversity Strategy Action Plan 2015-20 aiming to preserve biodiversity on the local level<sup>8</sup>.

### Financing Cleantech in Indonesia

Compared to other economies, cleantech in Indonesia is rather less developed. For example of the Global Cleantech Innovation Index<sup>9</sup>, Indonesia received the lowest ranking of all 40 examined countries. While the data and statistics on Indonesia's cleantech market are limited, it still offers interesting business opportunities<sup>10</sup>. According to the Global Commission on the Economy and Climate, Indonesia's development into a low carbon economy could boost economic growth of at least USD 26 trillion generate 65 million low-carbon jobs and avoid more than 700,000 premature deaths from air pollution all by 2030 compared to the business-as-usual scenario<sup>11</sup>. To support investments into cleantech, there is both international and national support. For example, the government of Indonesia invested more than IDR 12.4 trillion into clean energy. Likewise, the Clean Technology Fund is channelling USD 400 million to Indonesia to support mostly renewable energy and energy efficiency, aiming to mobilise additional USD 2.7 billion<sup>12</sup>. At the same time, Indonesia is setting up a system for sustainable finance with an internationally unique systematic plan, the Roadmap for Sustainable Finance in Indonesia launched by OJK, Indonesia's Financial Services Authority in 2014<sup>13</sup>. Sustainable finance is increasingly picked up by financial institutions in Indonesia resulting in the launch of the Indonesia Sustainable Finance Initiative (ISFI) by eight national banks and WWF Indonesia in May 2018. All these initiatives have the potential to increase investments in clean technologies.

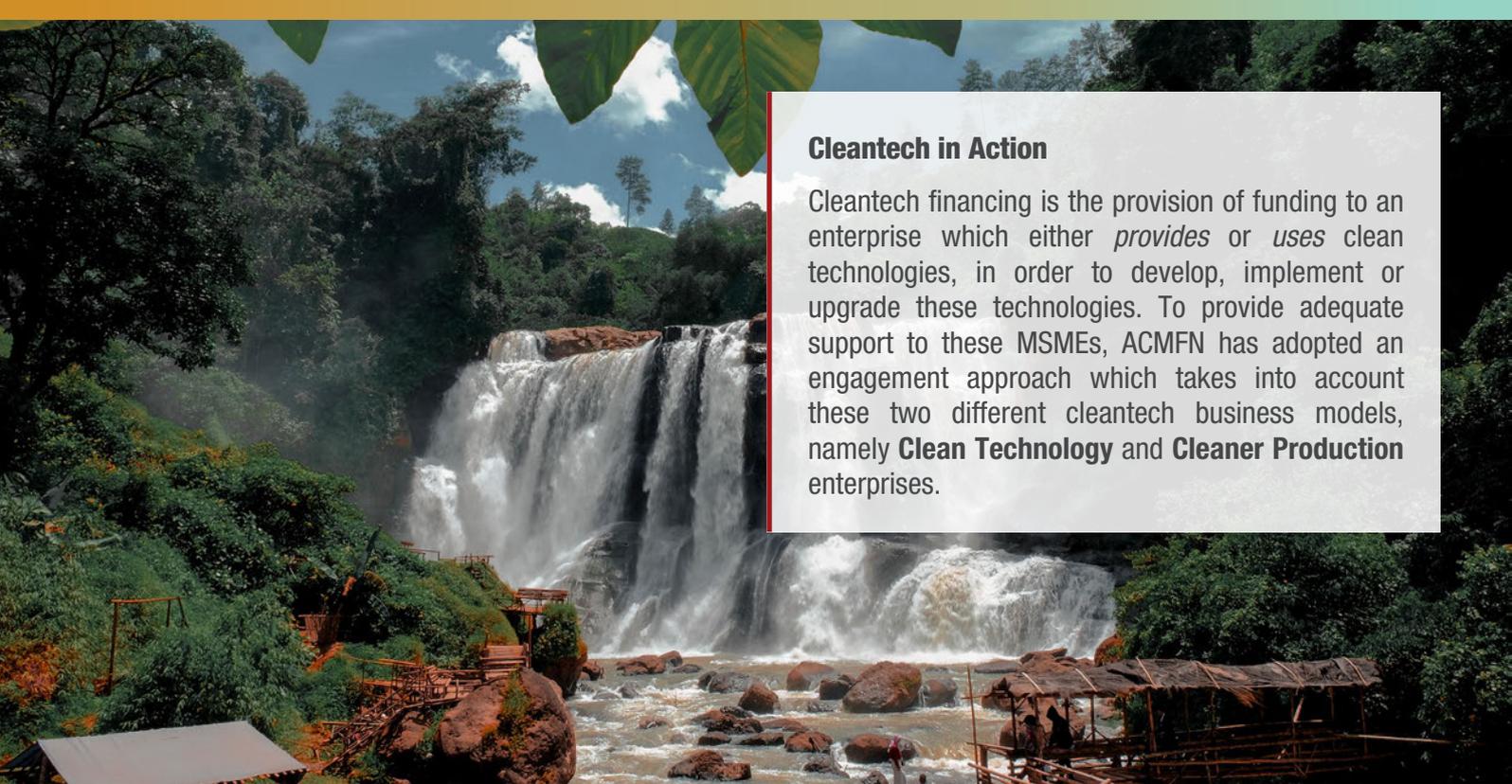
### Cleantech MSMEs to foster Green Growth

**MSMEs can make a significant contribution to green and inclusive growth by providing and applying clean technologies.**

Since MSMEs are major drivers of economies worldwide and the backbone of the Indonesian economy, there is great potential to be tapped into for clean technology investments. Indonesia has more than 56.5 million MSMEs, contributing over 60% to Indonesia's GDP in 2015, highlighting the importance of MSMEs for the country's economy. Overall, the average enterprise size in Indonesia is small compared internationally<sup>14</sup> with strong early-stage entrepreneurial activity<sup>15</sup>. The most dominant sectors amongst MSMEs are agriculture, fishery and for-

estry in line with Indonesia's strong land-use based economy. Especially in these sectors, the MSMEs are both important innovators and implementers of clean technologies, for example in terms of sustainable agricultural practices. A central challenge for cleantech companies particularly across Asian countries remains access to finance for clean technology investments. MSMEs need to be supported through capacity building, technical support, as well as access to finance for implementing clean technology initiatives. The largest available scheme to facilitate finance to MSMEs was launched by the government in 2017 is the Kredit Usaha Rakyat (KUR), the People's Business Credit. KUR is a government-backed microloan with an interest subsidy for still unbankable MSMEs, where the government and the banks split the risk with 70% taken by the government and 30% by the bank.





### Cleantech in Action

Cleantech financing is the provision of funding to an enterprise which either *provides* or *uses* clean technologies, in order to develop, implement or upgrade these technologies. To provide adequate support to these MSMEs, ACMFN has adopted an engagement approach which takes into account these two different cleantech business models, namely **Clean Technology** and **Cleaner Production** enterprises.

## 1.4 The ACMFN Cleantech Financing Universe in Indonesia

In cleantech value chains, the providers of clean technologies are considered **Clean Technology (CT) enterprises** because they are actively engaged in the development of **clean technologies** which offer solutions for a transition into a low-carbon economy. **The users are considered Cleaner Production (CP) enterprises** because they integrate **clean technologies and environmentally-friendly practices** into existing production processes as passive in-

**novators.** Their engagement in cleantech is typically driven by increased cost- and resource efficiency and greening their operations through the application of cleantech. Exhibit 4 categorises the six interviewed enterprises into CT and CP enterprises.

### Clean Technology Application Sectors in Indonesia

Clean technologies part of the ACMFN cleantech financing universe consider sustainable consumption and production pat-

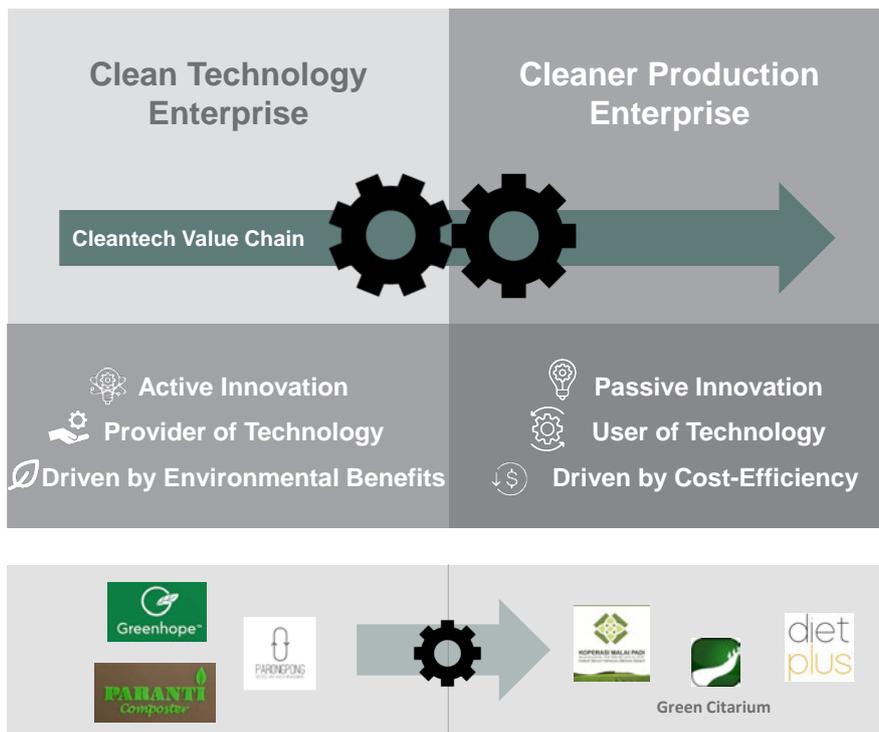
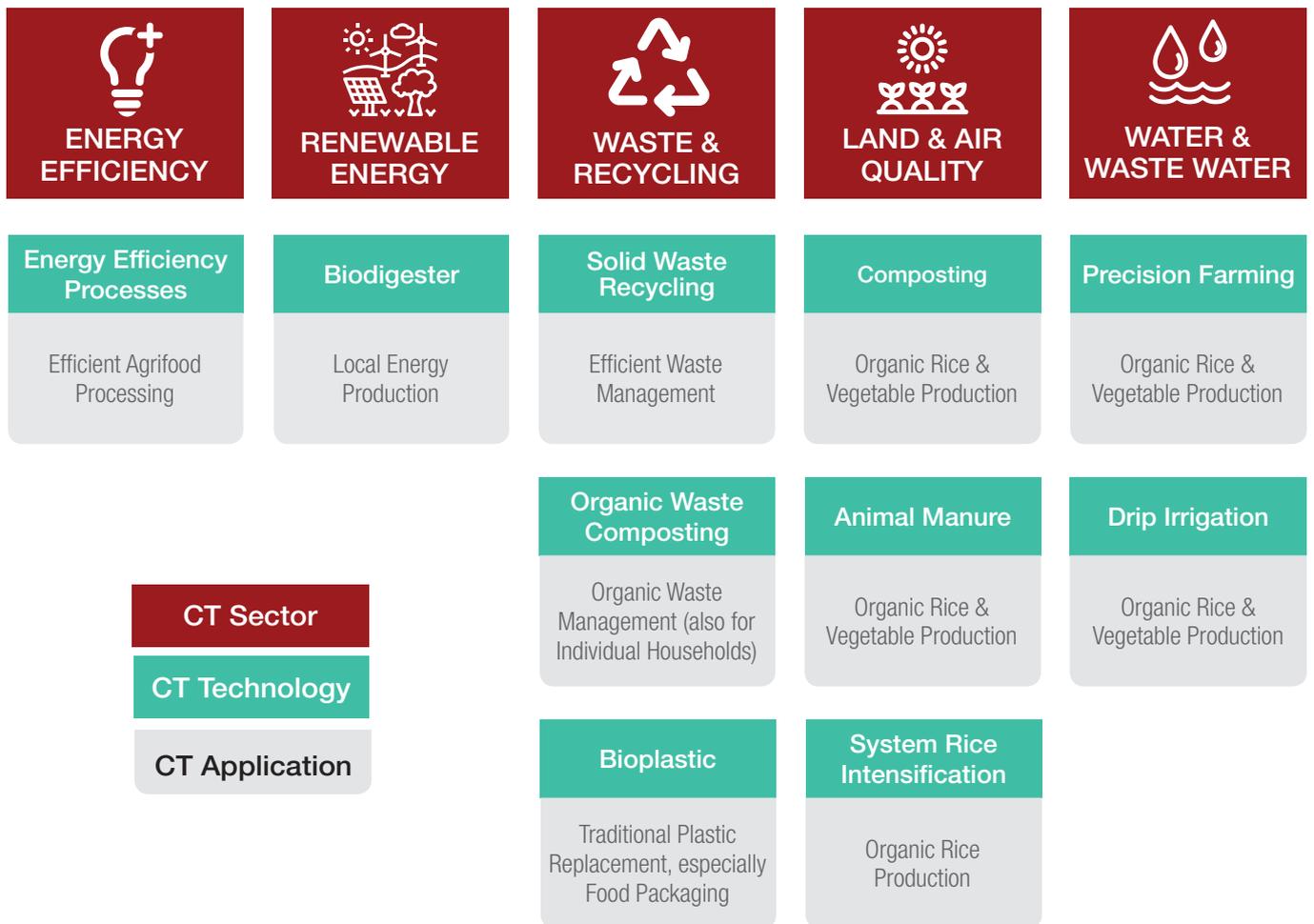


Exhibit 4: Strengthening Cleantech Value Chains

terns across industries and can be categorised in the main sectors: water and wastewater, land and air quality, waste and recycling, renewable energy and energy efficiency. Interviewed MSMEs represent the spectrum of most popular cleantech applications of which most are related to waste management and agriculture, cutting across multiple cleantech sectors including land and air quality, water and waste water, waste and recycling and energy efficiency. ACMFN Indonesia focused especially on strengthening agribusinesses and the food processing sector. As such, sustainable farming techniques supported by cleantech such as precision farming, system rice intensification and organic fertilisers through composting are typical examples of clean technologies and their application within the ACMFN universe (for a classification see Exhibit 5). Overall, clean technologies applied range from “high-tech” solutions such as innovative plastic alternatives to “low-tech” solutions like efficient agrifood processing.

**ACMFN Cleantech Financing Ecosystem in Indonesia**

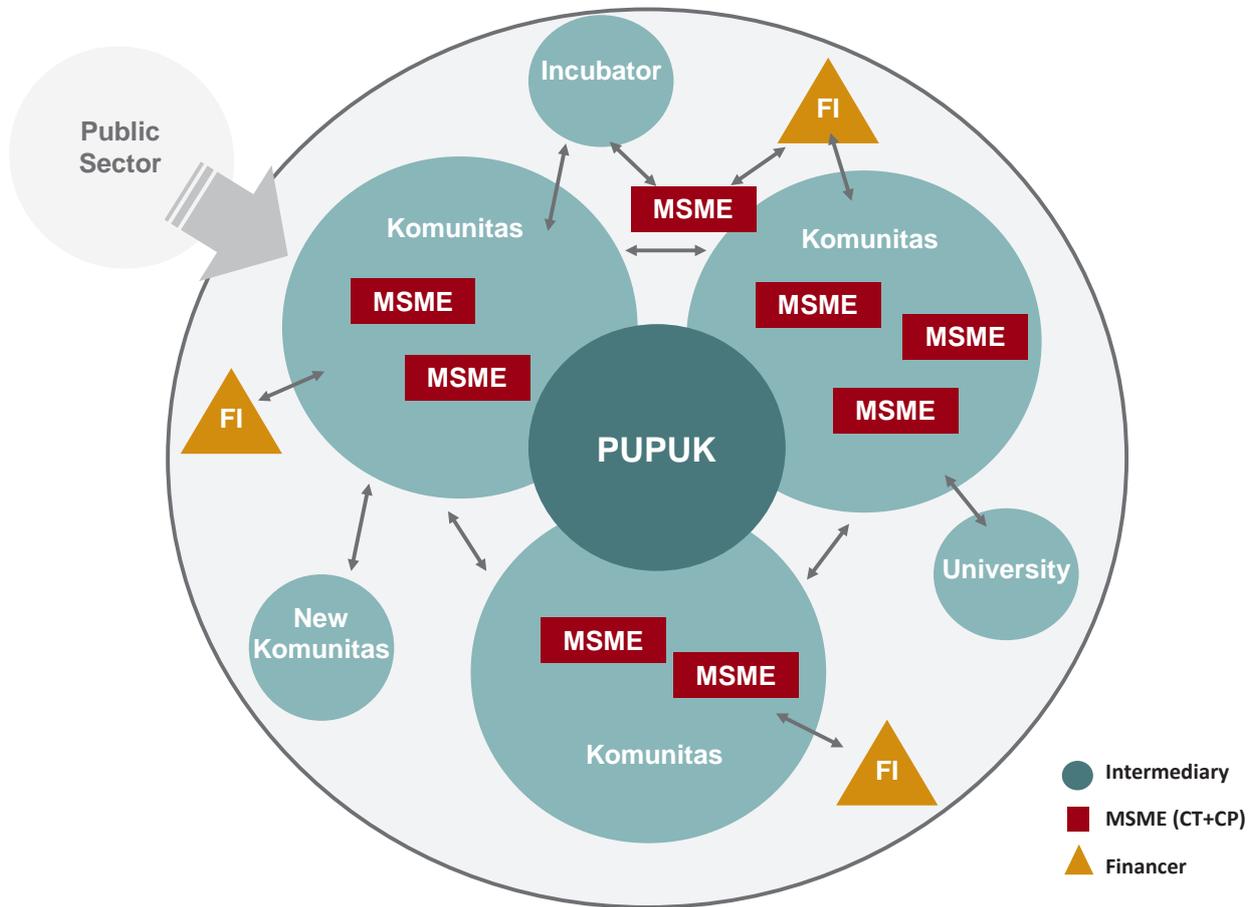
In the ACMFN cleantech financing ecosystem a diverse range of actors contribute to the promotion of CT and CP enterprises. PUPUK, ACMFN’s project host and Indonesia’s national focal point is a main actor and the driver of the local ecosystem. PUPUK initiates and coordinates cross-actor collaboration for an effective functioning of the network and exchange between different organisations including mainly MSMEs, financial institutions, and Komunitas within the local Bandung ecosystem. Komunitas are important key actors within the local ecosystem, as they function as communities or cooperatives of a bundle of MSMEs. Working closely together with Komunitas, PUPUK leverages their potential to spread knowledge about clean technologies and generally enhance knowledge sharing and exchange on a large scale. Moreover, PUPUK works together directly with MSMEs to provide capacity building, training and deal facilitation. Local financial institutions join in the ecosys-



**Exhibit 5: Classification of Clean Technology Application Sectors**

tem through a dialogue with MSMEs or Komunitas. The multi-stakeholder collaboration is facilitated by online platforms and organised events. Especially the Bandung Green Festival, where Komunitas and MSMEs present their products and services and engage in dialogues with both financial institutions and the general public and potential customers, is connecting the dots of the ACMFN cleantech financing ecosystem in Indonesia.

**By applying this ecosystem and community building approach with a strong regional focus, ACMFN recognises that it is important to consider the country-specific setup and develop an individual support approach for each project country. In this context, ACMFN Indonesia identified and leveraged the potential of local Komunitas to spread the green movement to a large scale of MSMEs and build a sustainable ecosystem.**



**Exhibit 6: ACMFN Cleantech Financing Ecosystem in Indonesia**



## 2. CLEANTECH MSME LANDSCAPE IN INDONESIA



MSMEs

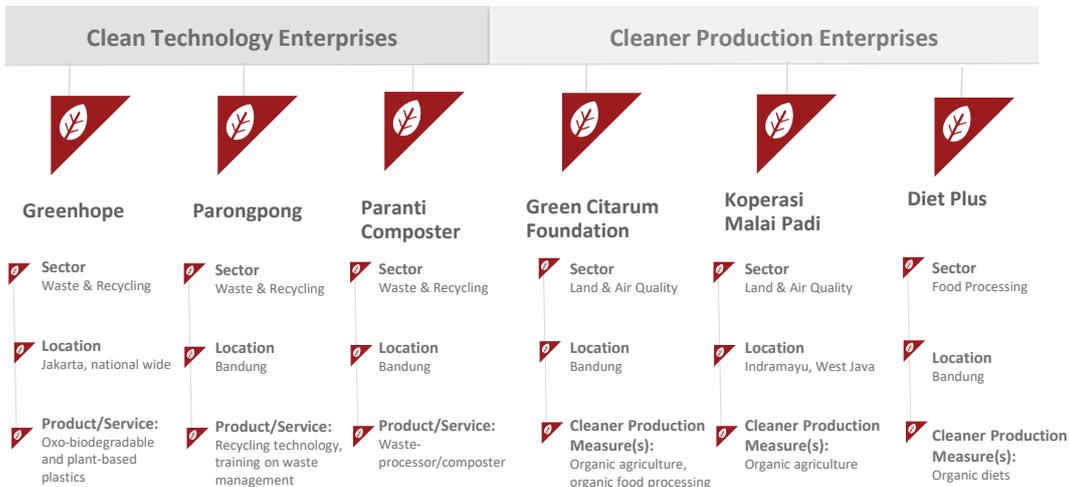


Exhibit 7: MSME Portfolio

To dive into landscape of cleantech MSMEs in Indonesia with practical examples, ACMFN has selected six cleantech enterprises to gather first-hand experiences and insights about cleantech engagement, potentials and challenges related to cleantech financing faced by cleantech MSMEs. These six enterprises are chosen to represent a broad picture of ACMFN-supported enterprises in Indonesia. They are active in multiple cleantech sectors ranging from waste to land and air quality and reflect different enterprise stages in terms of development, financing and size. Greenhope for example, is a more developed cleantech enterprise with over 100 employees and global visibility, whereas Green Citarum Foundation is a micro enterprise with 3 staff members and a local focus by distributing its products mainly in certain areas of Bandung. Importantly, interviewed enterprises include both CT enterprises, i.e. cleantech innovators that provide clean technologies and CP enterprises, i.e. cleantech appliers that incorporate cleantech to green their operations.

## 2.1. Motivation of Cleantech SMEs

ACMFN-supported cleantech MSMEs in Indonesia are strongly mission-driven to go green (for CP enterprises) or offer green technologies (for CT enterprises). **Environmental concerns are the enterprise's main motivation to engage in cleantech.** Both CT and CP enterprises strive to increase awareness and provide solutions that address environmental problems. Thereby, enterprises take into consideration also the climate-change related problems. For example, Malai Padi as a CP enterprise specifically recognises, applies and promotes measures to adapt to climate change amongst farmers. Through such climate-resilient farming methods, Malai Padi seeks to contribute to food security despite climate-change related volatility in farming conditions.



***Our mission is to [...] address the problem of plastic waste holistically as well as bringing innovative and useful eco-friendly products and services to the communities.***

*Greenhope, a Clean Technology Enterprise*

To develop efficient eco-friendly solutions, CT enterprises are driven by innovation and leverage new technologies as reflected by the commitment to innovation by the young generation in Indonesia. As such, Parongpong's employees refer to themselves as "technopreneurs" for example. Further, agricul-

ture-based enterprises are driven from the urge to provide healthy and high quality products which is achieved through organic and sustainable agricultural practices. Accordingly, the social impact of enabling healthy lifestyles for consumers is also a main motivation for CP enterprises especially.



***We want you to rediscover the meaning of healthy lifestyle, we are here to simplify your healthy meals.***

*Diet Plus, a Cleaner Production Enterprise*

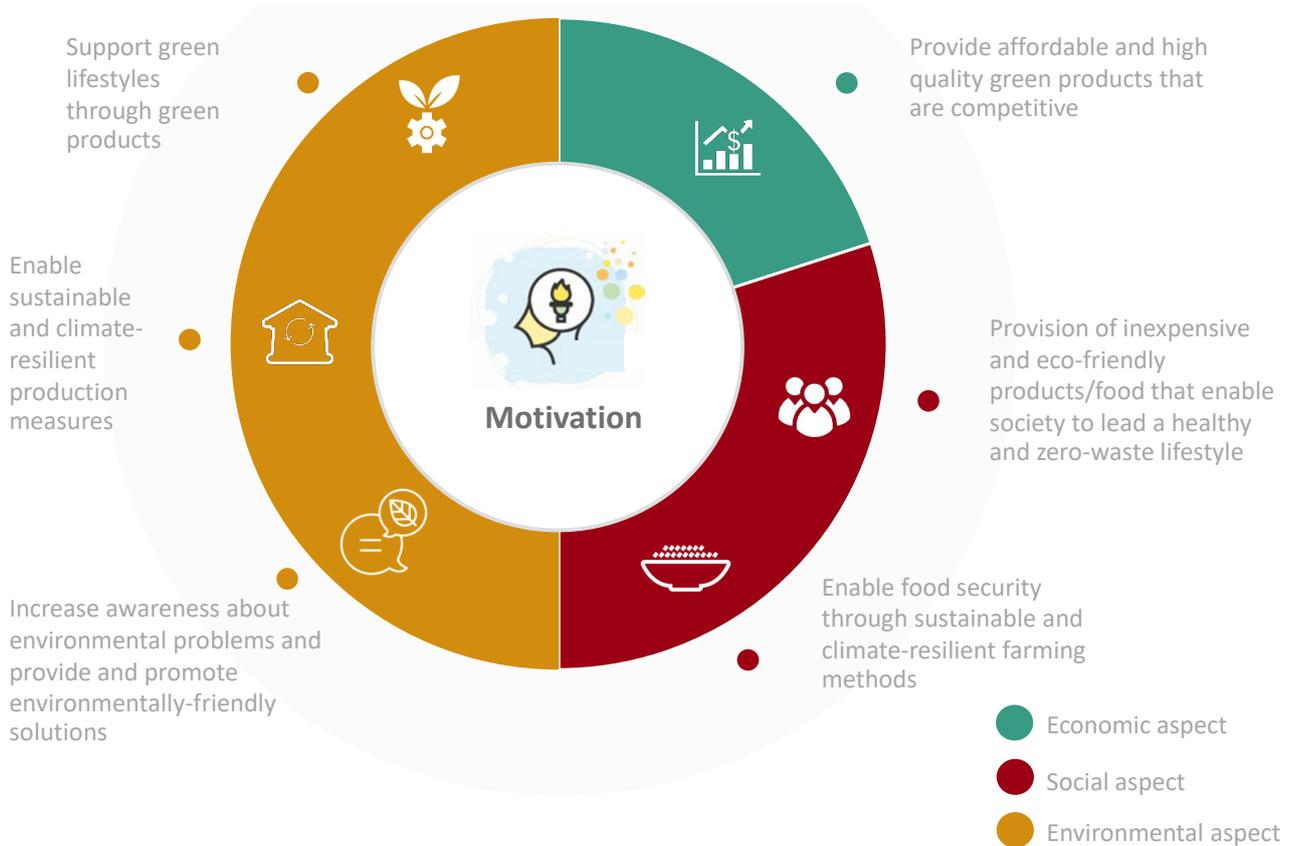
Cleantech MSMEs are motivated to provide high quality but also affordable and efficient green products that are competitive with non-green products. Enterprises are encouraged to find adoptable solutions that work. While struggling with a limited demand for green products, enterprises focus on the competitiveness of their products to convince customers to switch green as well.



***Money has not been our main objective; we are focused on creating high quality products and strive to offer good services, as the financial rewards will follow if you achieve these goals.***

*Greenhope, a Clean Technology Enterprise*

MSME's cleantech intensity (i.e. to what extent MSMEs develop or implement clean technologies in their business processes) varies between enterprises. Differentiating along the cleantech value chain, CT enterprises, their cleantech intensity is naturally high as their core business is centered around clean technology. Still, their cleantech intensity varies in terms of the breadth of activities and impact on different cleantech sectors, the amount of cleantech products within the enterprise's portfolio and the magnitude of sustainability in the value chain and production process of the clean technology. The interviewed CT enterprises Greenhope, Parongpong and Paranti Composter all provide cleantech solutions around the waste and recycling sector with a high cleantech intensity as their full product portfolio as based on cleantech. They provide a high impact potential across cleantech value chains in different



**Exhibit 8: Motivation on Cleantech Financing Engagement**

ways. Greenhope which offers environmentally friendly plastic alternatives reduces plastic waste across the value chain and indirectly impacts the land quality by reducing the amount of plastic waste kept in landfills and polluting the environment. Parongpong recycles waste into briquettes contributing to a sustainable energy supply. Paranti Composter offers a composter where the compost can be reused as manure. CP enterprises have a broad portfolio of cleantech initiatives which they can implement. CP enterprises typically base their choice of cleantech measures on factors such as available financing, individual preferences, the nature of their daily business, best practice examples from other enterprises and ultimately, the array of cleantech solutions available on the market. Interviewed CP enterprises have an overall medium to high cleantech intensity as they are in the process of going green, i.e. currently a portion of their product portfolio can be attributed to high cleantech intensity. **As the application of cleantech is often more expensive than conventional processes, CP enterprises are currently in a step-by-step transition.** For example in terms of packaging, the use of environmentally-friendly plastic alternatives is much more expensive than plastic packaging, resulting in a constant trade-off of price and quality making it difficult to become completely green, as mentioned by Green Citarum Foundation.

**Based on ACMFN experience, there is a clear trend that MSMEs take up the cleantech movement and go green.**



***In contrast to other composter machines, [our] machine [...] is able to turn waste into compost in just 24 hours.***

*Paranti Composter, a Clean Technology Enterprise*



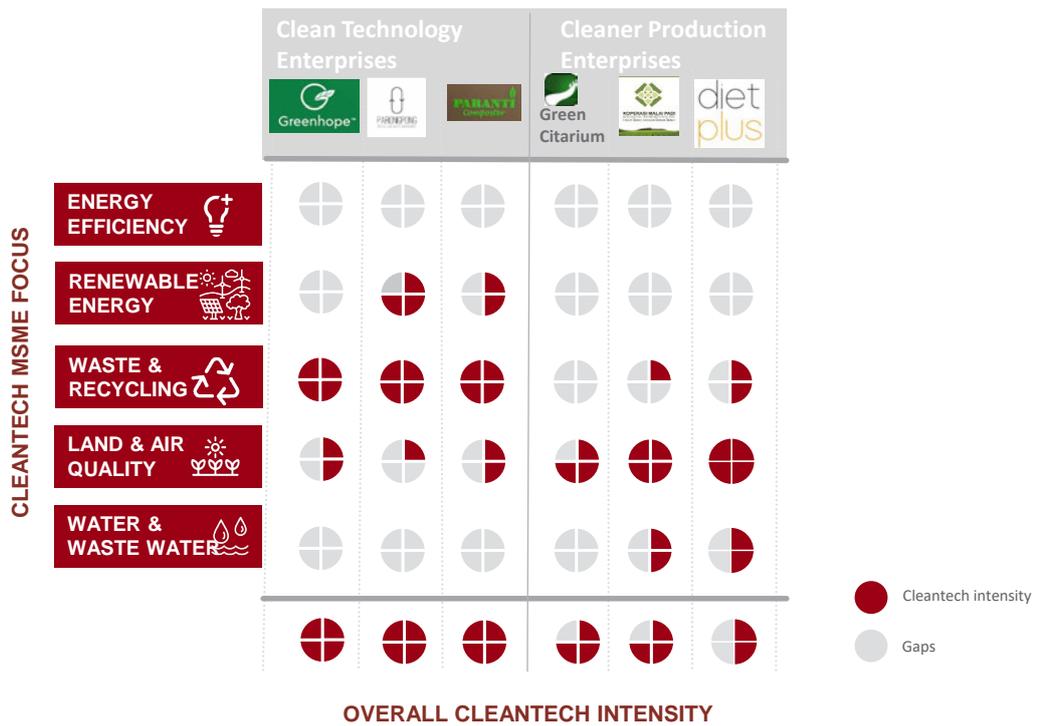


Exhibit 9: MSMEs’ Cleantech Intensity Based on Sector Activity

## 2.2. Financing Cleantech: Cleantech MSME Models

Accessing finance tends to be difficult for CT and CP enterprises in different ways, which is why ACMFN has adopted an engagement approach based on these different cleantech MSME models. In ACMFN’s efforts to improve the financing ecosystem of cleantech MSMEs in Indonesia, different financing needs and barriers of these two MSME models are considered to effectively support them.

### Clean Technology MSMEs

Often, CT enterprises face significant challenges to access finance for setting and scaling up their business. Typically, **clean technologies incur high development costs requiring a high initial investment** which is hard to obtain with the **low availability of financing instruments in both the cleantech space and the high risks associated with early-stage enterprises**. Therefore, CT enterprises often have to find ways to self-finance their investment or turn to conventional, strictly profit-driven microloans competing with less investment heavy business models for example. Furthermore, investors often restrain from such investment into CT enterprises as they lack a thorough understanding of the technology.

Parongpong is a best practice model of CT enterprises with an innovative business model that achieves to circumvent typical

financing challenges of CT enterprises. Parongpong provides a package of a recycling technology and training to clients with a model that requires very low investments needs. Firstly, Parongpong cooperates with a research and manufacturing partner which develops and patents the recycling technology. They then rent the technology exclusively from the partner and extent the rent to their customers. Thereby, Parongpong reduces initial research and development costs. As in this case, well developed technologies are often already available and their impact could be scaled by applying such distribution models. Secondly, Parongpong is translating their training for clients on waste management and the usage of the technology into an online training. That allows them to scale their customer base quickly without having to carry out resource-intensive training personally. It enables them to broaden their training portfolio over time by adding additional trainings for specific target groups e.g. they are already differentiating between a training for top management and for middle management.



*We believe with proper trainings, tools, methods, commitments, and networks, DIY waste management is possible.*

*Parongpong, a Cleantech Enterprise*



**Exhibit 10: Clean Technology Model - Parongpong**

**Cleaner Production MSMEs**

As opposed to CT enterprises, CP enterprises have the advantage of being able to start off with small self-financed cleantech initiatives such as energy optimisation or replacement of existing machinery or material. Since the business is not focused on the cleantech sector, but has usually established itself within a conventional sector, **cleantech investments can start small and gradually be increased based on available funds.** Yet, the challenge of accessing cleantech financing remains for CP enterprises due to financiers limited knowledge and trust in clean technologies. Therefore, the majority of interviewed CP enterprises relied on self-financing for implementing CP measures.

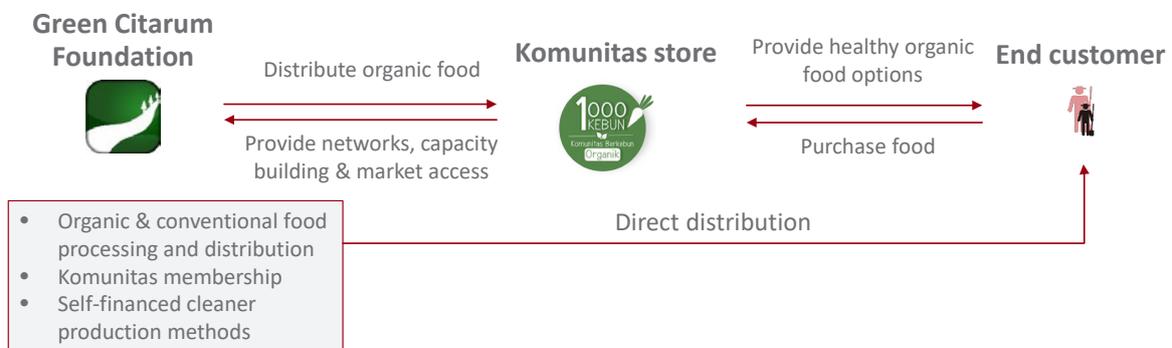
Green Citarum Foundation is an example of a typical CP enterprise from the ACMFN universe in Indonesia. While the business model itself is based on the conventional production and distribution of products, CP methods are naturally integrated

via updated production processes. Due to the absence of targeted financing instruments, this is financed by the means of self-financing for example through retained earnings or personal investment. Accordingly, Green Citarum Foundation gradually implements updates towards greener production methods on a step-by-step basis depending on available financing.



***We face a constant trade-off between price and quality, especially in terms of packaging***

*Green Citarum Foundation, a Cleaner Production Enterprise*



**Exhibit 11: Clean Production Model - Green Citarum Foundation**



### 2.3 Overview of Current Cleantech MSME Financing & Investment

An important factor that impacts an enterprise’s ability to access financing is its enterprise and investment stage. Typically, early-stage enterprises are associated with higher risks, while developed enterprises can present a proven business model and provide collateral. Investors and financial institutions take these investment stages in consideration to match their risk preference and financing terms including interest rates and collateral requirements. These preferences determine the ease or difficulty of accessing financing for MSME’s with different investment needs according to their stage (seed, venture, growth, mature).

ACMFN-interviewed MSME’s cover all enterprise stages. Paranti Composter is in the seed stage with developed prototypes in place but no organisational entity yet. Stepping one phase further, Parongpong is categorised in the venture phase with first customers in the pilot stage. Green Citarum, Diet Plus and Malai Padi can be allocated to the growth stage while Greenhope presents an already established enterprise with established product lines. For example, Greenhope’s biodegradable plastic alternatives are available in many Indonesian supermarkets and stores.

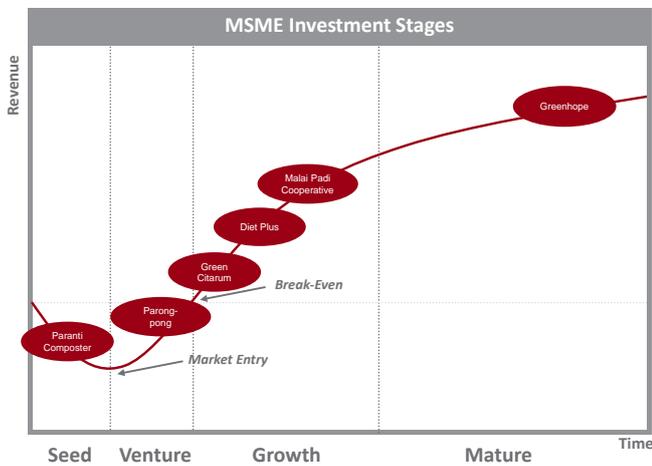


Exhibit 12: MSME Investment Stages



***In the first year, nobody wanted to sponsor the business and only family and friends helped in setting it up.***

*Paranti Composter, a Cleantech Enterprise*

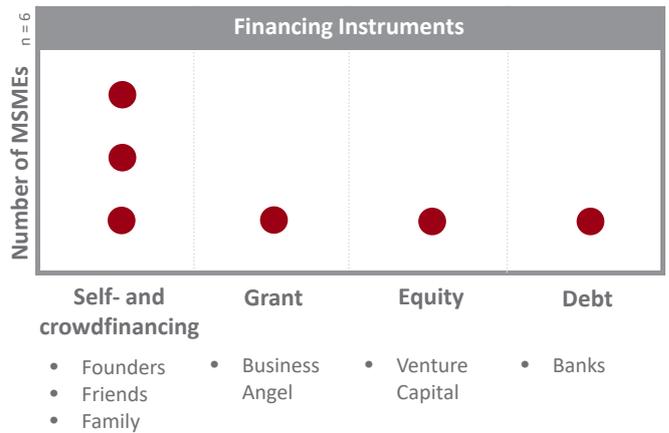


Exhibit 13: MSME Financing Instruments

**The investment stages are reflected in the type of financing used by interviewed MSMEs highlighting that it is easier for more established enterprises to win investors.**

On the one hand, Paranti Composter in the seed stage struggled to raise external financing to set up the business and develop the first prototype. Therefore, they relied on self-financing and crowd-financing from family and friends. Malai Padi on the other hand is already an established enterprise with a sustainable track record. This enabled them to access loans from the financial institution PNM through the programme Mekaar, KUR and the Partnership and Community Development Program (PKBL) through BRI.

In line with the ACMFN interview sample, most external financing in Indonesia is focused on growth-stage enterprises<sup>16</sup>. Similarly, Greenhope as a mature-stage enterprise could secure equity financing from a private equity fund and disclosed that they are in discussion with venture capital funds. Yet, the majority of interviewed enterprises relied on self-financing for their cleantech investments.

To address financing challenges of MSMEs, ACMFN Indonesia applies a three-fold approach implemented by the national host PUPUK. Firstly, ACMFN provides direct capacity building and training to propel MSMEs into an investment-ready stage through workshops, training and business plan consulting. Secondly, ACMFN provides advisory services to financial institutions. Thirdly, ACMFN facilitates the matchmaking between MSMEs and financial institutions. Thereby, events such as the Bandung Green Festival are key to enhance the connections and leverage the community approach of ACMFN Indonesia.

Cleantech MSME capacity building

Financing advisory services

National matchmaking between MSMEs and financial institutions



## CHALLENGES FOR MSMEs

Due to barriers in accessing finance, **cleantech adoption rates are low** and as a result, the number of entrepreneurs in the cleantech field is limited in Indonesia. High upfront development costs of clean technologies and high costs for cleantech solutions keep entrepreneurs from entering the field and established enterprises from going green. Overall, the lack of awareness about cleantech and its potential to address environmental challenges is a major barrier, on the side of enterprises, financiers and customers alike. This results in low adoption of cleantech, a lack of targeted financing instruments and a lack of demand for green products. Oftentimes, the awareness of the benefits of cleantech such as the advantages of energy efficiency or a circular waste management are not widely spread and incentivised by the government.



## KEY RECOMMENDATIONS

### ***Raising awareness & educating on clean technologies***

Raising awareness about the potential of cleantech initiatives will promote the positive benefits of cleantech investments and potentially stimulate their implementation and the demand for cleantech.

### ***Promoting government incentives and support***

Governmental incentives for cleantech can support on multiple fronts. On the one hand, incentives to opt for plastic alternatives for example can stimulate the demand for cleantech. On the other hand, investment incentives and schemes especially for early-stage enterprises can encourage private investors to co-invest. Targeted blended finance instrument can enable this effect on a large-scale.

### ***ACMFN Recommendation: Developing comprehensive business models that stimulate cleantech awareness and knowledge***

A powerful example to increase awareness about cleantech is through cleantech MSMEs themselves and incorporating it into the business model of CT enterprises. Alongside the provision of CT products, enterprises could provide training on CT measures, do site visits and attend events to explain their technologies and educate on the quality, material and benefits of technologies.



***Small enterprises are the source of living for most of Indonesian people. This sector needs to be developed since it stands as a strategic component of Indonesian economical structure and it contributes significantly to the country.***

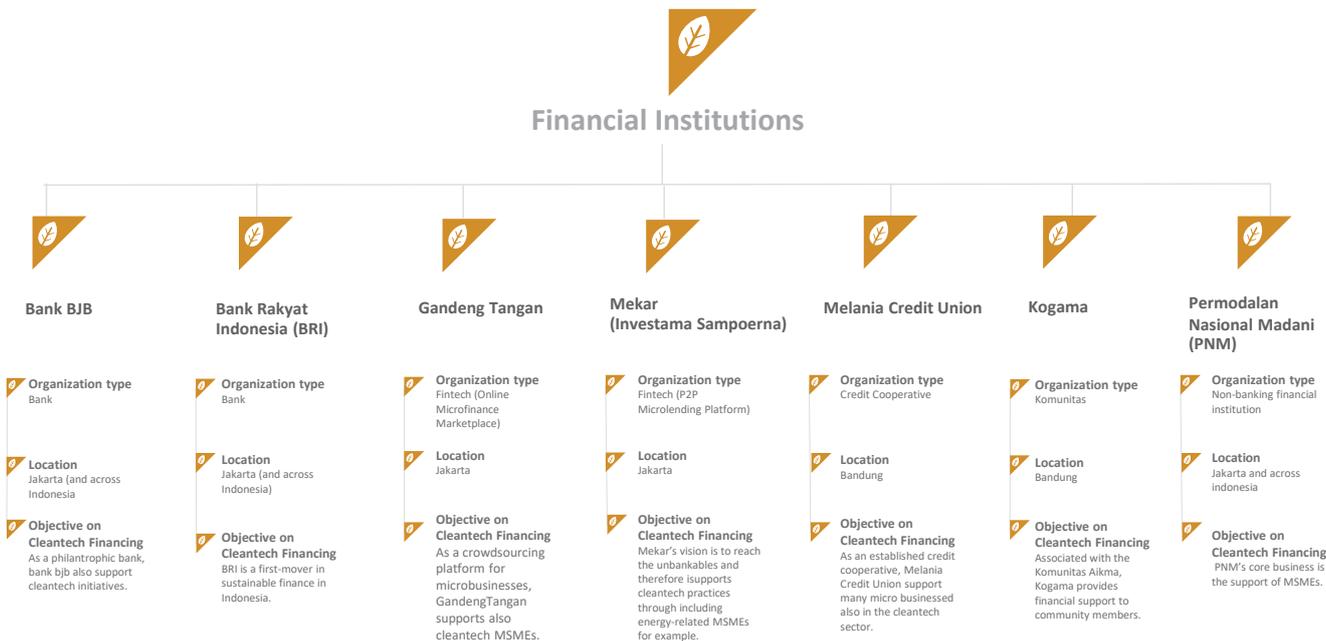
PUPUK



### 3. CLEANTECH FINANCING LANDSCAPE IN INDONESIA

The cleantech financing landscape in Indonesia includes many actors such as public and private sector banks, impact investors, fintechs and cooperatives, each of which have distinct motivations of engaging in cleantech financing and which offer different types of financing available to cleantech enterprises.

ACMFN has interviewed seven financial institutions which play a significant role in the Indonesian cleantech MSME financing space. Interviewed organisations include the banks **Bank BJB**, **Bank Rakyat Indonesia (BRI)**, the fintechs and cooperatives **Gandeng Tangan**, **Mekar**, **Melania Credit Union**, and **Kogama** and the state-owned non-banking financial institutions **Permodalan Nasional Madani (PNM)**.



**Exhibit 15: Financial Institution Portfolio**

### 3.1 Cleantech Financing Landscape

The Indonesian cleantech financing landscape is characterised by many different players with **commercial banks at the forefront accounting for nearly 80% of total assets**<sup>17</sup>. Overall in Indonesia, there are 120 commercial banks of which four banks are state-owned and the remaining 117 banks are private. Though fewer in numbers, the four state-owned banks Bank Mandiri, Bank Negara Indonesia, Bank Tabungan Negara and BRI are important actors, that influence the financial system. BRI, interviewed by ACMFN, is the oldest and largest bank Indonesia and well-known for its engagement in MSME financing with 80% of its lending portfolio<sup>18</sup>. BJB, also interviewed by ACMFN is likewise partly state-owned (30%) and known as a philanthropic bank. As the provision of finance for MSMEs is well established amongst banks, the financial system has been undergoing a green movement. This was initiated by the **“Roadmap for Sustainable Finance 2015-2019” developed by the Financial Services Authority OJK in 2014** with the aim to increase green financing programmes across Indonesian banks. In the meantime, OJK has launched an array of green finance trainings to support the banks to expand their capacities of environmental analysis and assessment of green loans. Eight pilot banks formed the Indonesian Sustainable Finance Initiative in 2018, amongst them BRI.

Next to banks, Indonesia has a vibrant **fintech scene that highlights the emerging phenomenon of crowdfunding** in Indonesia<sup>19</sup>. Key players are Kitabisa.co.id and iGrow and the two ACMFN-interviewed organisations Mekar and Gandeng Tangan, two online peer-to-peer (P2P) lending platforms leveraging mobile technology to support access to finance for MSMEs. Mekar was born out of the Putera Samperna Foundation and is recently setting up an impact fund in addition to the P2P lending platform. Gandeng Tangan’s cornerstone is that provision of microcredit at a 0% interest rate to the benefit of borrowers.

The glimpse into Indonesia’s financial players is rounded off by non-banking financial institutions (NBFIs) including cooperatives, associations and state-owned NBFIs. At the national level, PNM is a state-owned organisation for MSME empowerment that provides financial support and capacity building specifically for MSMEs. At a local level, cooperatives and associations coin the MSME financing landscape. As such, the long-established Melania Credit Cooperative situated in Bandung provides its around 2000 members with microcredits. On a smaller scale, Kogama is a grassroots financial institution that cooperates with the Komunitas Aikma and provides loans to Aikma members specifically.

### 3.2 Cleantech Financing Motivations

Financial institutions are primarily driven by social aspects to engage into cleantech-related financing.

**Financial institutions strive to support social goals such as poverty reduction and increasing the access to finance for rural areas and unbankables, as well as lifting the level of financial literacy.**

For example, BJB educates remote areas through local bank agents and Mekar has the objective to reach the unbankables.



***Our vision is to reach the unbankables, where most banks (apart from BRI) fail.***

*Mekar*

Thereby, financial institutions recognise and follow the governmental push for social impact and CSR measures as emphasised by BJB. In terms of economic aspects, financial institutions are driven by the opportunity to support the establishment of new ventures and scale opportunities for existing enterprises.

**Notably, investors follow the principles of conventional investments including profitability and collateral requirements for example and do not yet focus on cleantech-related economic opportunities such as triggered cost savings or carbon market opportunities for example.**

Nonetheless, financial institutions are increasingly motivated by environmental objectives as well, following the development of a sustainable financing system in Indonesia. Accordingly, banks have stressed to be motivated to be a role model for sustainable finance and contribute to national and international sustainability agendas like the SDGs. Overall, it becomes clear that the Indonesian cleantech financing ecosystem is still under development as common motivations to engage in cleantech play a subordinate role compared to social impact.



***We want to be first-movers in sustainable finance.***

*BRI*



**Exhibit 16: Financial Institutions' motivation on cleantech financing engagement**

### 3.3 Financial Instruments Snapshot

The majority of ACMFN-interviewed cleantech enterprises rely on self-financing struggling to raise funding through other financial instruments due to common challenges with by MSMEs that they are associated with higher risks and higher transaction costs. Zooming into the financial instruments offered by financial institutions, further financing opportunities for MSMEs become apparent with a **strong focus on debt instruments available for MSMEs**. This debt-focus is supported by government policies such as the Kredit Usaha Rakyat (KUR), a government-backed credit scheme for MSMEs that offer viable business opportunities but are yet unbankable under conventional terms. Banks across the country are eligible to disburse the KUR loan including BRI and BJB. Malai Padi Coop. for example has received a loan of IDR 100 mio through KUR.

Connected to debt instruments are innovative financing vehicles such as the microlending P2P platforms Mekar and Gandeng Tangan. As reflected by analysed financial institutions, **equity investment into MSMEs is still at an early stage of development in Indonesia**. In 2017, 61 licensed venture capitals could be counted in Indonesia, compiling only 2% (USD 1.29 bn) of total venture capital investment across Asia<sup>20</sup>. Fol-

#### Kredit Usaha Rakyat (KUR):

- "People's business credit"
- Indonesia's largest financing scheme for MSMEs introduced by the Ministry of Finance in 2007
- Microcredit loans at preferential with a guarantee of the government for 70% of the loan, so that disbursing banks only carry 30% of the risk

**MSMEs can receive preferential loan terms for KUR at an interest rate of 5.9% p.a. compared to 10% by microfinance institutions**

lowed by the example of other countries where government intervention has successfully initiated the domestic venture capital scene, the Indonesian government has announced the establishment of the Environment Fund in September 2018<sup>21</sup>. As the first domestic cleantech fund, it shall focus on financing emission reduction activities by pooling private and public sources into a blended-finance instrument. Yet, the impact on the domestic venture capital industry remains to be seen. Similar to the Environment Fund, the government launched the SDG Indonesia One (SIO) Fund in 2018 that focuses on SDG-related projects and relies on blended financing as well<sup>22</sup>. The example of these two funds highlights the **increasing relevance of blended finance tools within the Indonesian context**.

Another commonly used financial instrument for MSMEs is **grant financing through Corporate Social Responsibility (CSR) measures, where Indonesia has been an early-mover**. The government has set up a range of policies and programmes for enterprises to reserve a share of profits for CSR. For example, extractive industries are meant to spend 2% of their profits on CSR and all state-owned enterprises reserve 4% of their profits for CSR under the Partnership Programme with Small Business (PKBL) established in 2007<sup>23</sup> which focuses on grants and microcredits for potential but non-bankable business. Through the PKBL, for example Malai Padi has received support by BRI for 50 farmers and grants from PT KAI. While enforcement of these guidelines is low due to a lack of related guidelines and reporting, CSR from multinational corpo-

Financial Institution	Investment Volume (IDR)	Instrument(s)	Financial Products for MSME Investment
Bank BJB	183 bn	Debt (including state-subsidised loans)	<ul style="list-style-type: none"> <li>• Kredit Ushay Rakyat (KUR), low interest with 5.9% p.a. (80% of MSMEs funds)</li> <li>• Kredit Cinta Rakyat (KCR) which focuses on agricultural MSMEs (20% of MSME funds)</li> <li>• PESAT, a loan guarantee programme for MSMEs</li> <li>• Cleantech investment: focuses on the sectors energy efficiency, apartments, fertiliser industry efficiency, plastic waste processing and clean water supply</li> </ul> (Fund sizes relate to the financial year of 2018)
	271 bn		
BRI	291.61 tn	Debt (including state-subsidised loans), Grants	<ul style="list-style-type: none"> <li>• BRI Care Programm Funds (IDR 164.09 tn)</li> <li>• KUR, reached more than 2600 farmers (IDR 69.89 tn)</li> <li>• Kupedes, a loan facility for productive and consumptive micro enterprises (IDR 210.1 tn)</li> <li>• Cleantech investment: focus on the sectors energy, agriculture, infrastructure and processing industries, for example through the BRI Peduli Programm which implements Corporate Social and Responsibility through community development</li> </ul> (Fund sizes relate to the financial year of 2018)
	163.6 bn		
Gandeng Tangan	10.4 bn	Debt	<ul style="list-style-type: none"> <li>• Online crowd-lending platform with loans for 1992 microenterprises at 0% interest rates</li> <li>• Cleantech investment: no specific data available as focus lies on social impact</li> </ul> (Fund sizes relate to the total number of supported enterprises since Gandeng Tangan's foundation in 2015)
Mekar	124 bn	Debt, Equity	<ul style="list-style-type: none"> <li>• Peer-to-Peer (P2P) platform with so far 54,442 loans (IDR 84 bn)</li> <li>• In addition to P2P, Mekar is setting up an impact fund of up to IDR 700bn</li> </ul> (Fund sizes relate to the total number of supported enterprises since Mekar's foundation)
	150 bn		
Melania Credit Union	150 bn	Debt	<ul style="list-style-type: none"> <li>• Credit cooperative with currently 2000 members</li> </ul> (Fund sizes relate to the current funds outstanding)
Kogama	115 mio	Debt	<ul style="list-style-type: none"> <li>• Grassroots financial institutions that offers three types of loans to Komunitas members:                             <ul style="list-style-type: none"> <li>• Loan for material: 1-3 mio IDR for max. 10 months</li> <li>• Loan for tools: ca. 5 mio for 10 months (IR 1% p.m.)</li> <li>• Working capital: max 10 mio. for max. 10 months</li> </ul> </li> </ul>
	14.4 tn		
PNM	14.4 tn	Debt	<ul style="list-style-type: none"> <li>• Financial and capacity building support through two main programmes:                             <ul style="list-style-type: none"> <li>• ULaMM: Microcredit with an average loan size of 75 mio IDR; every 3 months after disbursement, there is a combine monitoring and capacity building through a site visit</li> <li>• Mekaar: Loan to women to start a business with an average loan size of 2-5 mio IDR; weekly meetings which are a prerequisite for disbursement including training based on the womens' needs to support them to set up their own business</li> </ul> </li> </ul>

0-300m;10-300bn;10-300tn

■ = Investment into MSMEs  
■ = Investment into cleantech

**Exhibit 17: Financial Instruments and Funds for Cleantech MSMEs**

rations regularly funds impact-driven enterprises, including cleantech. Within the ACMFN cleantech financing universe, the use of CSR grants plays a subordinate role however, as none of the interviewed enterprises have received CSR grants from local or multinational companies yet.

All in all, **with a promising number of financial instruments available for MSME financing, financial institutions still have a relatively small portfolio for cleantech-specific MSME investments.** Only the larger banks include funds steered towards cleantech investments specifically.

### 3.4 Positioning of Financial Institutions

The investment focus of interviewed financial institutions differs moving gradually from traditional, profit- and risk-reduction-driven investment towards integrating environmental aspects towards becoming a “cleantech financier”. As reflected by the available financial instruments which often apply a sole focus on MSME financing and finance cleantech enterprises merely by chance, **all financial institutions are positioned to focus on MSME financing** and do not necessarily consider environmental aspects. This leads an underutilised potential for financing of cleantech enterprises as they have to compete with other profit-driven MSMEs for funding. Currently, there are only limited impact-focused instruments geared towards cleantech MSMEs. During ACMFN-interviews, only Bank BJB and BRI highlighted investments for green purposes specifically. Thereby, BJB touches upon a range of cleantech sectors by pointing out environmentally-focused investments into energy efficiency, industry efficiency, fertilisers, plastic waste processing and clean water supply. Similarly, BRI finances projects related to cleantech including the cleantech sectors energy and land and air quality through agriculture and, infrastructure and processing industry projects. Typically, BJB and BRI integrate environmental concerns throughout their loan process by including green criteria into the credit assessment. For example, they require certifications and the fulfilment of eco-friendly standards for the palm oil industry. **BJB signed a Memorandum of Understanding with PUPUK to scale cleantech financing together.** Therefore, it can be expected that BJB gradually shifts its focus further to cover cleantech financing as well.

Similarly, green financing is on the rise within BRI, which is undertaking a sector mapping of sectors where they are already disbursing money to categorise the sustainable finance sector. Another development within commercial banks that is shifting the focus on greening finance is the development of green banking policies. Both BJB and BRI for example have developed a range of initiatives and policies for greening the bank itself.

This includes energy efficiency measures, paperless work and capacity building and environmental coaching for local communities on green conservation for example. **Likewise, the other MSME-focused financial institutions are slowly but gradually taking up the green finance movement** for example by providing capacity training on organic farming for enterprises and capacity building on green finance for MFIs to serve as multipliers in the case of PNM.

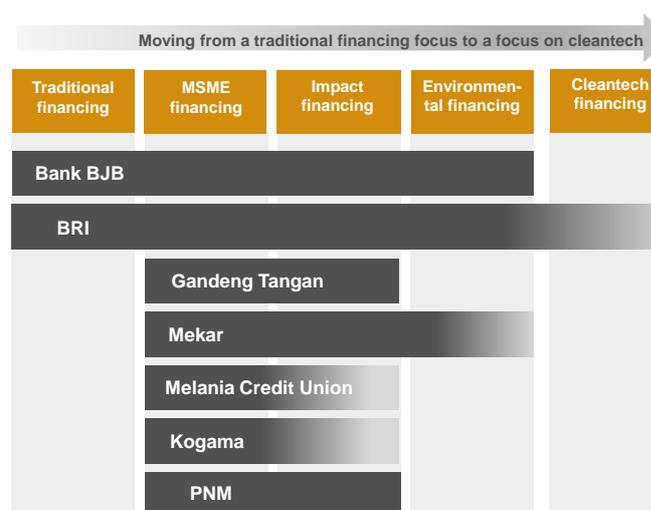


Exhibit 18: Position in CT Financing Provision

### 3.5 Accessing Cleantech Financing at Different Enterprise Stages

Considering investment volumes and the integration of cleantech-related aspects into financial instruments, the commercial banks BJB and BRI are most involved in cleantech MSME financing in all enterprise stages. The other financial institutions primarily focus on the early stages of enterprise development with limited integration of cleantech related aspects. Overall, ticket size of MSME financing vehicles are very small.

**While financing of micro-enterprises is especially challenging due to high risks and high transaction costs, financial institutions in Indonesia have pushed to provide many financing opportunities which target small ticket sizes especially.**



*Cleantech is a new aspect. We only focus on green products for now.*

*Bank BJB*

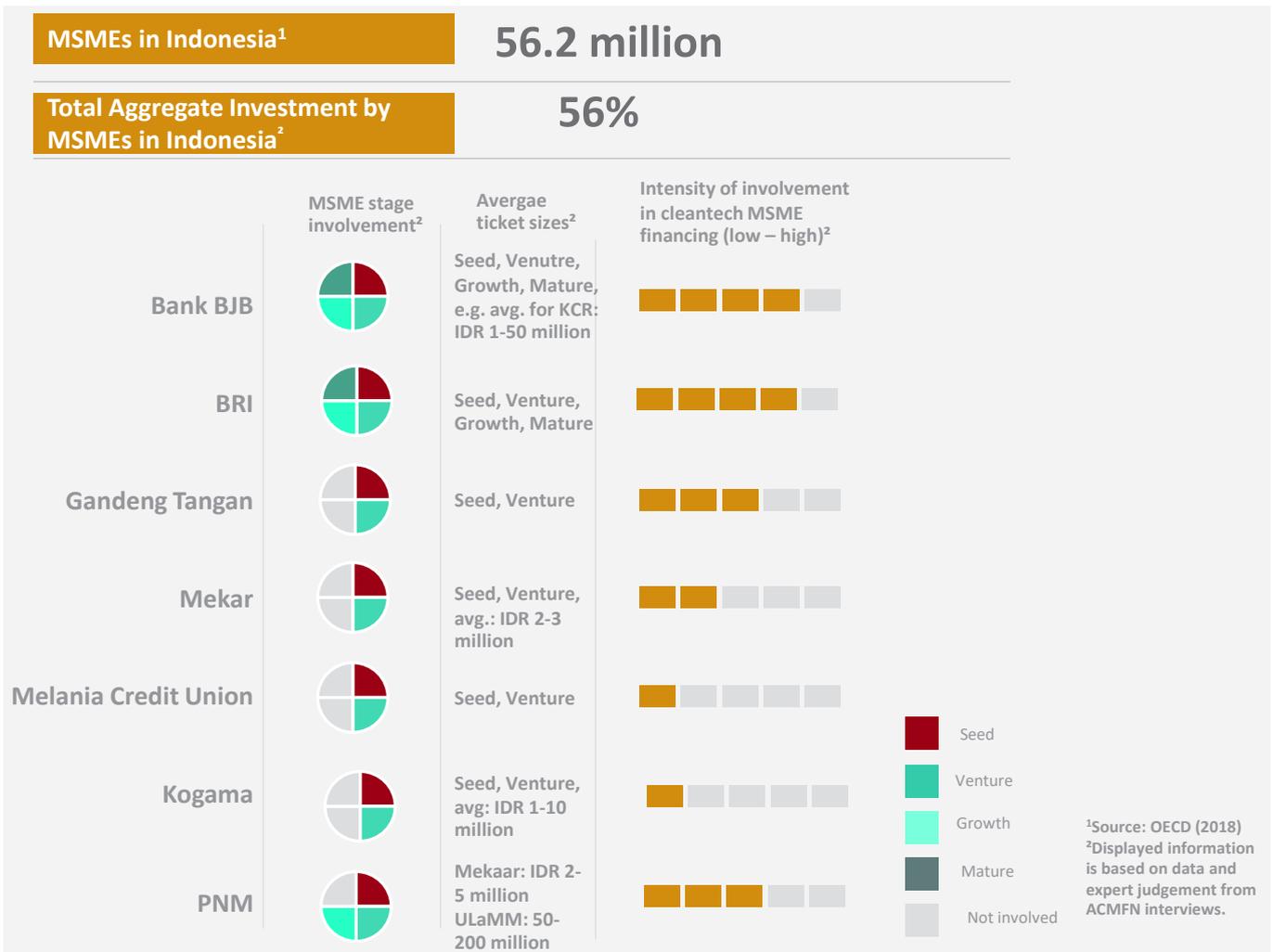


Exhibit 19: FI’s Involvement in Cleantech MSME Investment



## CHALLENGES FOR FINANCIAL INSTITUTIONS

Cleantech awareness is generally low both on the side of enterprises and on the side of financial institutions. **Financiers lack the require knowledge about cleantech and specific funding requirements** of cleantech projects and enterprises. MSME financing is already a challenge for financial institutions due to higher risks of early enterprises, higher transaction costs related to smaller ticket sizes. Despite that financial institutions are recognising the need for MSME financing, they are lacking behind to go one step further and provide targeted cleantech MSME financing instruments. By nature, cleantech projects add further aspects to the challenges of MSME financing namely **longer turnaround time due to the need of assessing the clean technology and longer tenor required for environmental benefits and according cost benefits to materialise**. For many enterprises, environmental risks and climate change specifically increase the risk of enterprises and financial institutions do not yet act upon the opportunities of cleantech investments. In addition, financial institutions are held back from engaging in cleantech financing as they **fear they are loosing competitiveness due to a lack of regulations and as they are lacking the resources to expand their cleantech financing capacities**.

All these challenges result in a **lack of differentiation between MSME and cleantech financing products** to the disadvantage of cleantech MSMEs which have to compete with non-cleantech investments with different investment requirements.



## KEY RECOMMENDATIONS

### ***Capacity development on cleantech financing for financial institutions***

While the willingness of financial institutions to engage in green financing generally is increasing, financiers are held back by a lack of knowledge and resources to extent their capacities for the assessment and appraisal of cleantech enterprises. Increased cleantech capacities will boost the development of targeted cleantech financial products and help to upgrade from generic MSME financing to cleantech MSME financing. Pooling public and private funding provides an avenue to reduce competition for public funds which financial institutions currently rely on.

### ***ACMFN Recommendation: Developing targeted cleantech financing instruments through blended finance***

Targeted cleantech financing products for MSMEs are lacking due to high risks, low incentives and limited expertise. These challenges can be overcome with innovative blended finance approaches, where public and private financial institutions from either local or international level come together to provide cleantech financing products. For example, cleantech financing experience international institutions could contribute the necessary expertise and development finance could support such instruments through risk sharing facilities or risk guarantees to increase the incentives.



***More funding from private sources in addition to government funding is needed.***

*PNM*



***Environmental risk is a challenge: As climate change is unpredictable, the risk of the investment increases***

*Mekar*



## 4. CLEANTECH INTERMEDIARY LANDSCAPE IN INDONESIA

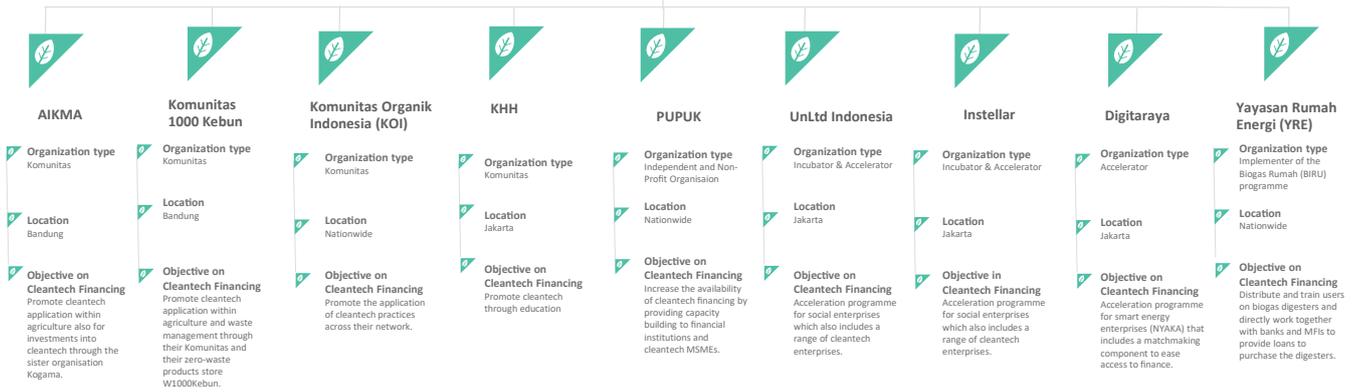
### 4.1 Cleantech Intermediary Landscape

The Indonesian cleantech financing ecosystem is completed by intermediaries which support the MSMEs, help bridge the financing gap and enhance the overall supportive framework for cleantech. The cleantech intermediary landscape consists of incubators and accelerators, advisory providers, government-supported associations and community-based organisations that are especially important within the Indonesian context. ACMFN has selected nine intermediaries which play important roles in the Indonesian MSME financing space for an in-depth interview and analysis. The accelerators and incubators are represented by **UnLtd Indonesia**, **Instellar** and **Digitalaraya**. While most incubators in Indonesia are small-scale to date, the government launched a Roadmap to Incubator Development 2014-2029<sup>24</sup>. The goal is to increase the number of 75 incubators counted in 2014 to 732 incubators in 2029. To achieve this goal, the plan is to build 100 science and technology parks across the country. Next to incubators, targeted programmes and non-profit organisations are included in the analysis. As such, **Yayasan Rumah Energi (YRE)** implements BIRU, the Indonesian Domestic Biogas Programme promoting the use of biogas digesters. Further, the local ACMFN-partner

PUPUK which translates into “fertilizer” works directly with MSMEs to encourage collaboration across the whole cleantech ecosystem. Lastly, the ACMFN-intermediary universe is strongly characterised by Komunitas. Komunitas are community-based models where members with similar business interests join together into a critical mass. PUPUK works together closely with a range of Komunitas and the four Komunitas **AIKMA**, **K1000Kebun**, **KOI** and **KHH** Kota Baru Parahyangan have been interviewed to gather first-hand experiences. Interviewed MSMEs are members of the Bandung and Jakarta branches of these Komunitas. For example, Green Citarum Foundation is an active member of the Komunitas AIKMA and K1000Kebun.



**Intermediaries**



**Exhibit 20: Intermediaries Portfolio**



**Exhibit 21: Roles of Intermediaries**

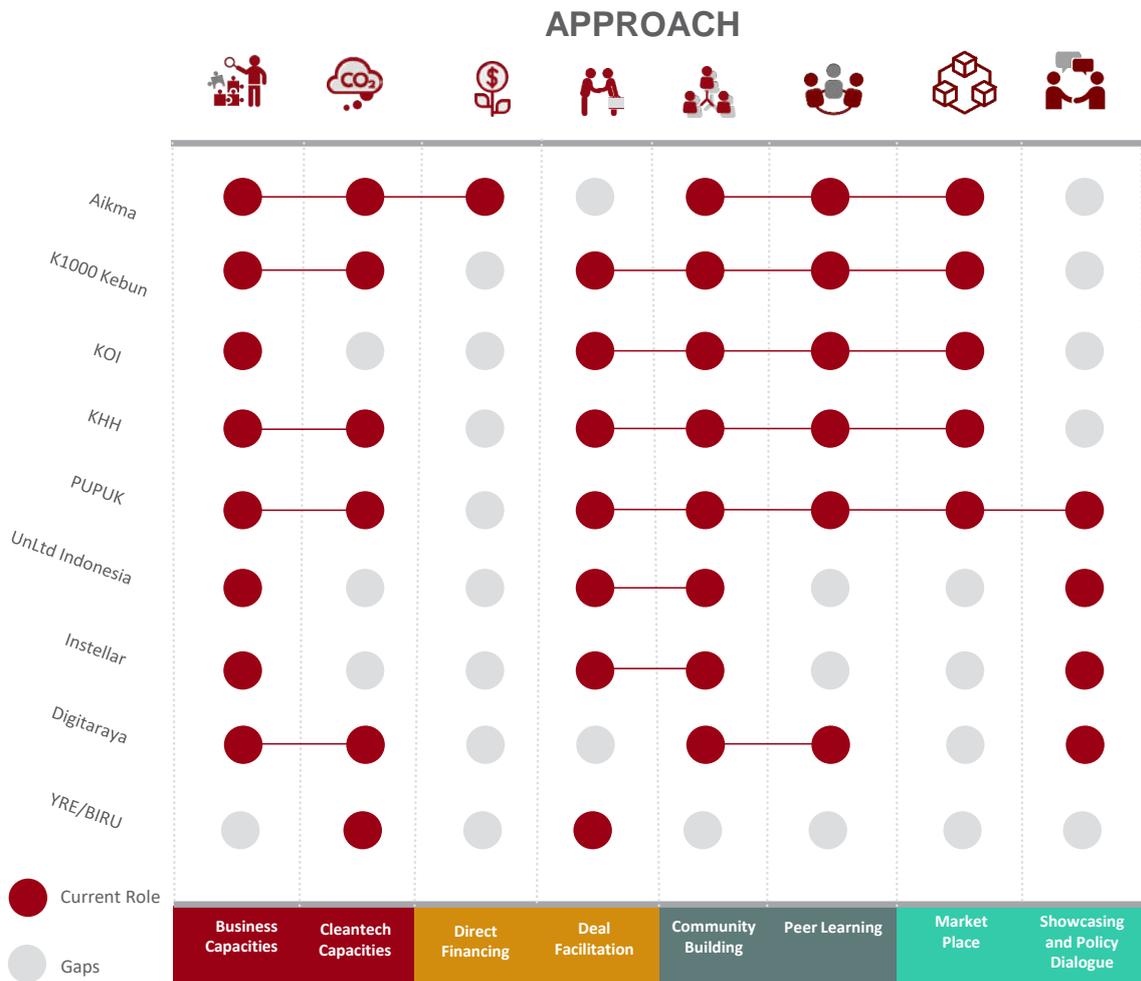
The intermediary portfolio indicates that different actors apply a range of approaches to promote cleantech financing. Through their different activities working together directly with MSMEs, financial institutions and the wider society, intermediaries take up different roles to support Indonesian cleantech MSMEs, such as capacity building both in terms of business and cleantech capacities, access to finance through direct financing and deal facilitation, network building by encouraging peer learning and fostering the cleantech community across stakeholder groups and offering a platform in the form of a market place or showcasing event and policy enhancement.

**Key focus areas of the current role portfolio covered by interviewed intermediaries are the promotion of business capacities and deal facilitation.** In terms of business capacities, interviewees emphasise enhancing financial literacy of cleantech MSMEs through trainings but also through cooperation with local banks which educate MSMEs such as YRE and K1000Kebun for example. While the support programmes

for necessity-driven entrepreneurship are widespread in Indonesia, few intermediaries support productivity growth of MSMEs (OECD 2018).

**The focus on business capacities and especially financial literacy helps to fill this gap and upgrade the managerial skills of entrepreneurs to enhance the productivity performance of Indonesian enterprises.**

The majority of intermediaries facilitate financial deals by connecting enterprises and financiers through matchmaking events or individual introductions for example. These facilitations have led to a number of investment either by venture capital injections as for many of KOI members or credits for working capital for example. YRE eases the provision of loans by banks and MFIs through a 2-year constructional error warranty for biogas digesters and including private organisation to back the loan.



**Exhibit 22: Roles Covered by Intermediaries**



**Access to finance is not our focus, but we facilitate the connection between enterprises and investors.**

*KOI, Komunitas*



**We educate our member about green topics and show them how to improve their products.**

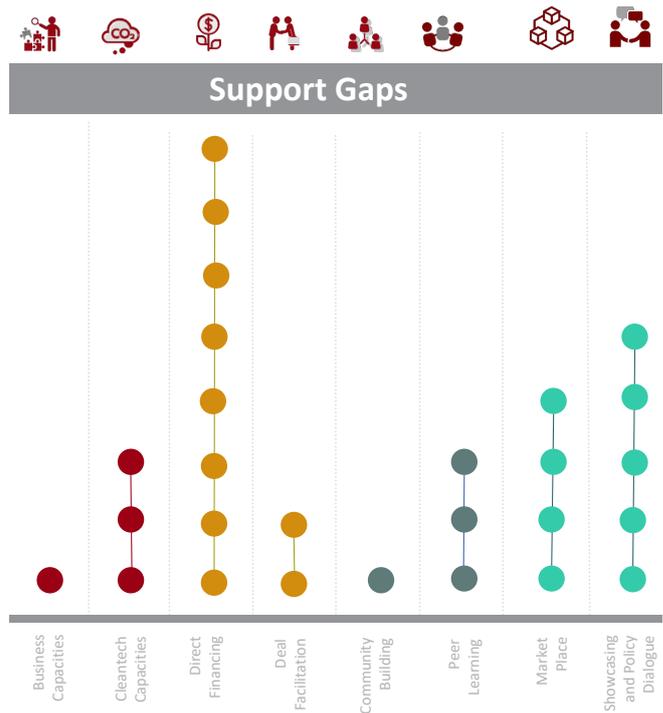
*Aikma, Komunitas in Bandung*

A range of intermediaries also offers a platform to cleantech enterprises. Interviewed organisations have developed a variety of showcasing events such as the Bandung Green Festival by PUPUK, the Pasar Hejo by KHH and the Do Good Series by Instellar, where cleantech enterprises can showcase their products. Especially Komunitas also help with distribution of products by providing a market place through an own store, like the W1000Kebun store, online stores or retail agreements with malls and supermarkets like KOI. Notably, **Komunitas are very strong in community building and cleantech education as they reach enterprises, consumers and the wider society through multiple channels and awareness raising activities** such as workshops, stores, online communication through social media and farm visits for example.

A major gap in the support of intermediaries comes in terms of direct financing. As many intermediaries facilitate deals and establish connections, **there is potential to leverage the intermediaries' profound knowledge of enterprises in close collaboration with financial institutions to provide targeted financial support that matches the needs of the specific enterprise.** Only Aikma works hand in hand with the financial institution Kogama, which provides loans that fit specifically the needs of Aikma member enterprises and their working capital requirements. In reverse, the risk for Kogama is reduced as Aikma's knowledge about the members serves as a track record and can select suitable enterprises and therefore reduce non-performing loans to a minimum.

As indicated by the provision of cleantech capacity building of multiple intermediaries, cleantech support plays a significant role within the service portfolio of intermediaries, though at a varying intensity. The intermediaries' focus intensity on cleantech support is assessed by the service portfolio and the strength of influence in the cleantech space. Although not all intermediaries exclusively focus on cleantech support, some are still influential players in the ecosystem contributing to the development of cleantech MSMEs and particularly their access to finance.

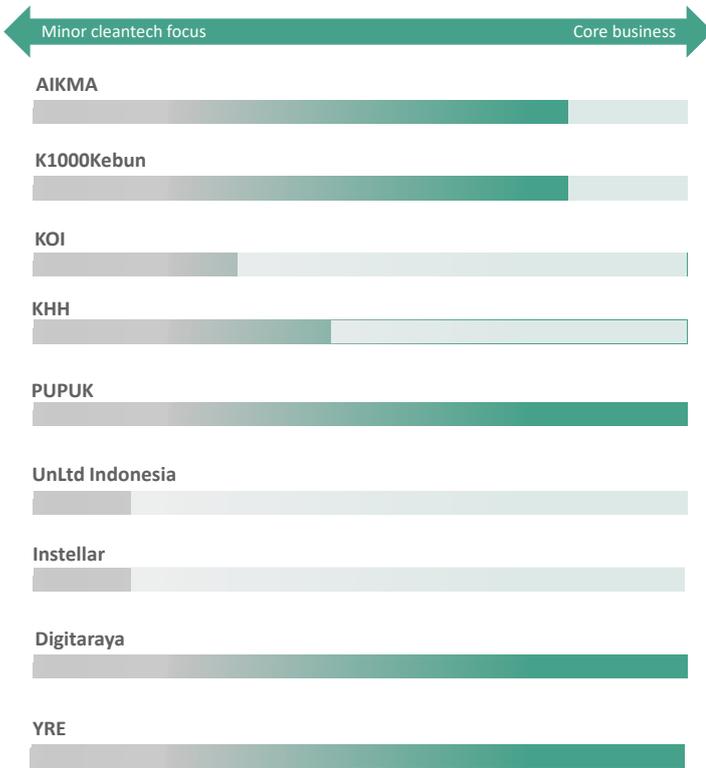
For example, some intermediaries have a clear focus on cleantech as their core business. As such, PUPUK has adapted promotion of cleantech and sustainability as their core business. Zooming into the cleantech intensity of Komunitas, it becomes



**Exhibit 23: Intermediaries Gaps**

apparent that some Komunitas have strongly gone green such as KOI and K1000Kebun, and others have started to go green such as KHH and AIKMA. K1000Kebun has even introduced their own standard of certification for green and cleantech products. So far, 70% of the product portfolio of more than 500 products offered in the affiliated store is green and the other 30% are in transition to become fully green according to K1000Kebun. Next to interviewed Komunitas, there is a range of other Komunitas in the ACMFN cleantech universe that have started to go green such as Caturasmil Cirebon offering batik artisan, REACTS, farming and processing seaweed, Yayasan Arkom, crafting bamboo and Sacita Muda, the start-up community in Padjadjaran University to name a few examples.

The incubators UnLtd Indonesia and Instellar have a rather low cleantech intensity compared with their overall portfolio due to their broader focus on social impact. For instance, 34% of the enterprises that Instellar works with, is active in the environmental space. Digitaraya however has an acceleration pro-



**Exhibit 24: Intermediaries' Focus Intensity on Cleantech Support**



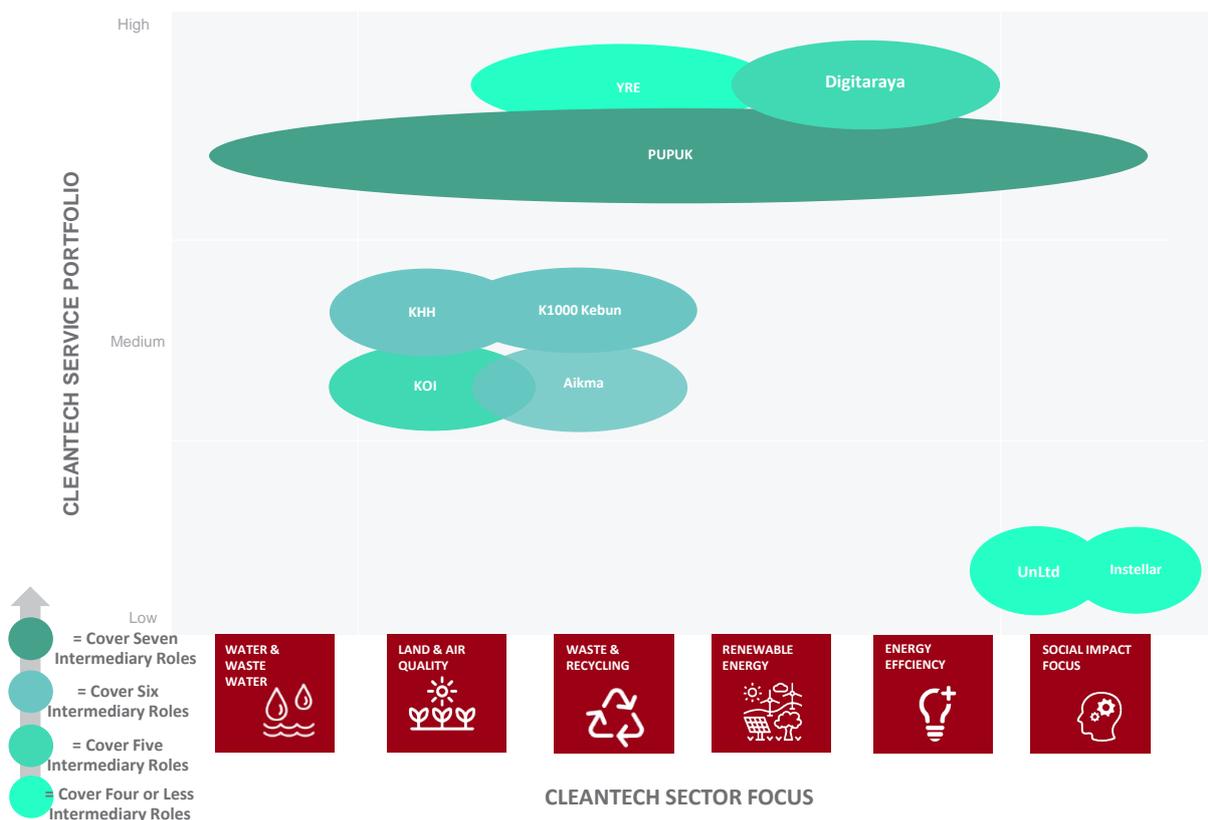
***We want to be a role model for other Komunitas across West Java to go green.***

*Aikma, Komunitas in Bandung*

programme for smart energy and energy acceleration, NYALA, that boosts the cleantech intensity.

Feeding into the overall relevance of intermediaries in the cleantech space, different organisations focus on different cleantech sectors. Komunitas often have an agricultural focus including the production and processing of food, i.e. the cleantech sectors land, air and often waste to a certain extent. Other intermediaries focus on specific sectors such as YRE on waste to energy and Digitaraya on energy efficiency and renewable energy.

The spread of intermediaries across sectors relates to the cleantech application universe and the portfolio of CT and CP enterprises. Again, the focus of the Indonesian economy on agriculture becomes apparent with intermediaries focusing on land and air, as well as Indonesia's waste problem with intermediaries focusing on waste and recycling but also energy management. Further, the significance of the broader social impact sector in Indonesia is growing<sup>25</sup>.



**Exhibit 25: Relevance in the Cleantech Space**

## 4.2 Zooming in: Intermediary Models

The support needs and solutions of a cleantech MSME financing ecosystem vary by country. **Within the Indonesian ACMFN cleantech financing ecosystem, especially localised approaches like ACMFN Indonesia's Komunitas approach including local events like the Bandung Green Festival to foster the ecosystem have proven successful to spread the green movement across the ecosystem.**

### Komunitas Model

Komunitas are a popular way in Indonesia for small-scale enterprises to connect and join forces to effectively grow together. For the cleantech ecosystem, Komunitas have evolved in a key player to strengthen the ecosystem from the ground. Through their connection to individual MSMEs and the wider ecosystem including financial institutions and all players across the value chain including consumers and suppliers and society at large, Komunitas play an important role both in the financing of cleantech and in education and awareness raising for cleantech. As an integral part of the enterprise's daily life, Komunitas can leverage their local ties and wide visibility to effectively spread the green movement and support the cleantech transition of enterprises step-by-step. A success factor to achieve that is the regular communication with members, for which Komunitas often leverage social media.

For example, K1000Kebun communicates with members through WhatsApp groups and triggers an online discussion every Wednesday on specific topics related to cleantech such as green lifestyles or waste management. Another success factor of Komunitas is strong community orientation that strengthens a basis of trust and reduces resistance to change to trial cleantech-related innovation. As such, K1000Kebun is a Komunitas that encourages cross-generational collaboration. Through that, they achieve to tackle the challenge that the young generation is hesitant to become farmers and are starting a trend of "cool" farming that is attractive for farmers from all generations.

**To strengthen the ACMFN-cleantech financing ecosystem, PUPUK collaborates closely with Komunitas in Bandung and Jakarta with a best practice being large local events like the Bandung Green Festival implemented by PUPUK through ACMFN, where Komunitas and MSMEs join together, exchange and present their enterprises and products to the larger society including potential customers and financial institutions facilitating a market place for SMEs and deal facilitation with financiers.**

# Komunitas Model

SHOWCASING



“

„Komunitas“ is a community-based model where members share the same business interests and join together building a critical mass for example in terms of a community of smallholder farmers.

”

### Key benefits of the model



Involvement and interactions with all stakeholders



Building the ecosystem for interactions



Facilitating exchange on the application of clean technologies and practices.

→ Komunitas support the ecosystem of MSMEs by putting the community at the core bridging gaps between generations and regions.

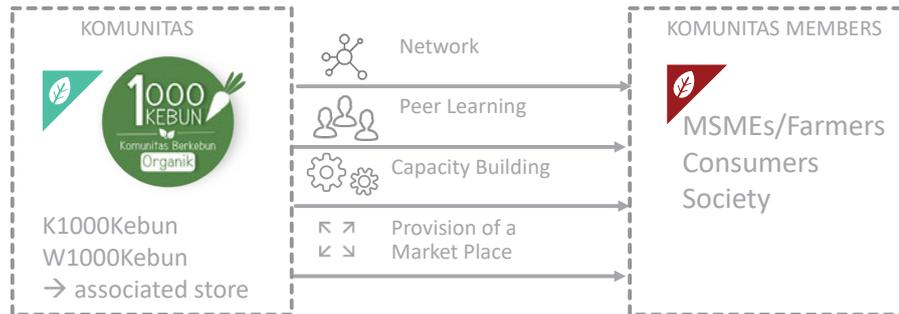
# Best Practice

## K1000Kebun

BEST PRACTICE



### Approach



### Achievements

- Own store with 500+ products, 70% green
- Own standard of certification for „green“
- Connect 30-40 suppliers
- Use multiple channels for knowledge flow (workshops, discussions, social media)

“

We like sharing, not teaching or judging.

”

### Exhibit 26-27: Komunitas Model and K1000Kebun Best Practice

All in all, support gaps for MSME cleantech financing, which are needed to boost cleantech MSMEs innovation capacity and productivity growth, need to be addressed on the intermediary level. In ACMFN interviews, stakeholders recommended actions to leverage potentials in the intermediary landscape.



“

**Cooperation with other Komunitas is crucial.**

*Aikma, Komunitas*

“

**Networking with other Komunitas is a major success factor to build the cleantech ecosystem.**

*KHH, Komunitas*



## CHALLENGES FOR INTERMEDIARIES

**Cleantech adoption rates in Indonesia are still low** as the incentives for enterprises to go green are limited. This stems from a **lack of knowledge from enterprises and consumers about cleantech** and its benefits for the enterprise and society and a **lack of demand for green products**. Overall, cleantech is still a niche market in Indonesia. For example, consumers are reluctant to buy green products due to the wide-spread perception that green products are more expensive than conventional products which most of the time is not necessarily true as cleantech often comes with the potential for cost reductions. In line with limited cleantech knowledge, the **definition of green varies which slows down collaboration across ecosystem stakeholders** which may have different perceptions about green. In terms of financing, the main support gap for enterprises is that most intermediaries only connect enterprises with financial institutions but **do not facilitate any concrete financing options for cleantech enterprises**.



## KEY RECOMMENDATIONS

*There is the need to create the same perceptions about green.*

*Yayasan Rumah Energi*

### **Foster close collaboration between ecosystem actors**

In ACMFN interviews, stakeholders agreed that in order to develop the clean technology market in Indonesia, ecosystem actors need to collaborate closely. Together, intermediaries can strengthen the ecosystem and build the market further. Intermediaries can leverage their position as a middle-man between all relevant stakeholders including enterprises, financial institutions, consumers, society and policy as well. Further, the in-depth knowledge of intermediaries about the stage of enterprises could be leveraged more in their work with financial institutions to reduce the risks for investors based on intermediary recommendations. For example, the collaboration between Aikma and Kogama, where Kogama provides loans to Aikma members, emphasises the high potential of such partnerships. Kogama stressed that they have very good experiences with providing loans to Aikma members as for example, they have a good attitude and regular repayments.

### **Enhance knowledge sharing further**

Investments into ecosystem building are crucial to create demand for cleantech products. To effectively continue to build the ecosystem, the spread of knowledge about cleantech is crucial. In ACMFN interviews, Aikma recommended the usage of the Internet as an effective tool to spread cleantech knowledge and reach also remote areas. Further, the creation and development of a knowledge sharing platform is important to assist stakeholders in understanding technologies and implementation procedures.

### **Advocate for a standardised certification for green**

Aligning the perception and definition of green builds a common ground for the development of the cleantech market. ACMFN interviewees have already taken first steps to foster the establishment of a common definition. For example, KOI has approached the government to establish standards for skin care products and K1000Kebun has developed an own certification mechanism for products offered in their store. A common and clear definition of green is an important signal to highly enterprises' sustainability efforts to consumers but also financial institutions so that they can more easily assess cleantech investments. The intermediaries' efforts to arrive at a certification and definition of green need to be taken up on a broader level and scaled.

### **ACMFN Recommendation: Leverage the power of intermediaries to spread the cleantech movement on the local level**

Through PUPUK's work on the ground implementing ACMFN activities, experience has shown that a key aspect related to clean technology development and application is to focus on the local ecosystem. It would therefore be highly effective to leverage the local networks and peer-learning opportunities of Komunitas further and set up additional clusters across the country.



## 5. CLEANTECH FINANCING CHALLENGES, TRENDS & RECOMMENDATIONS

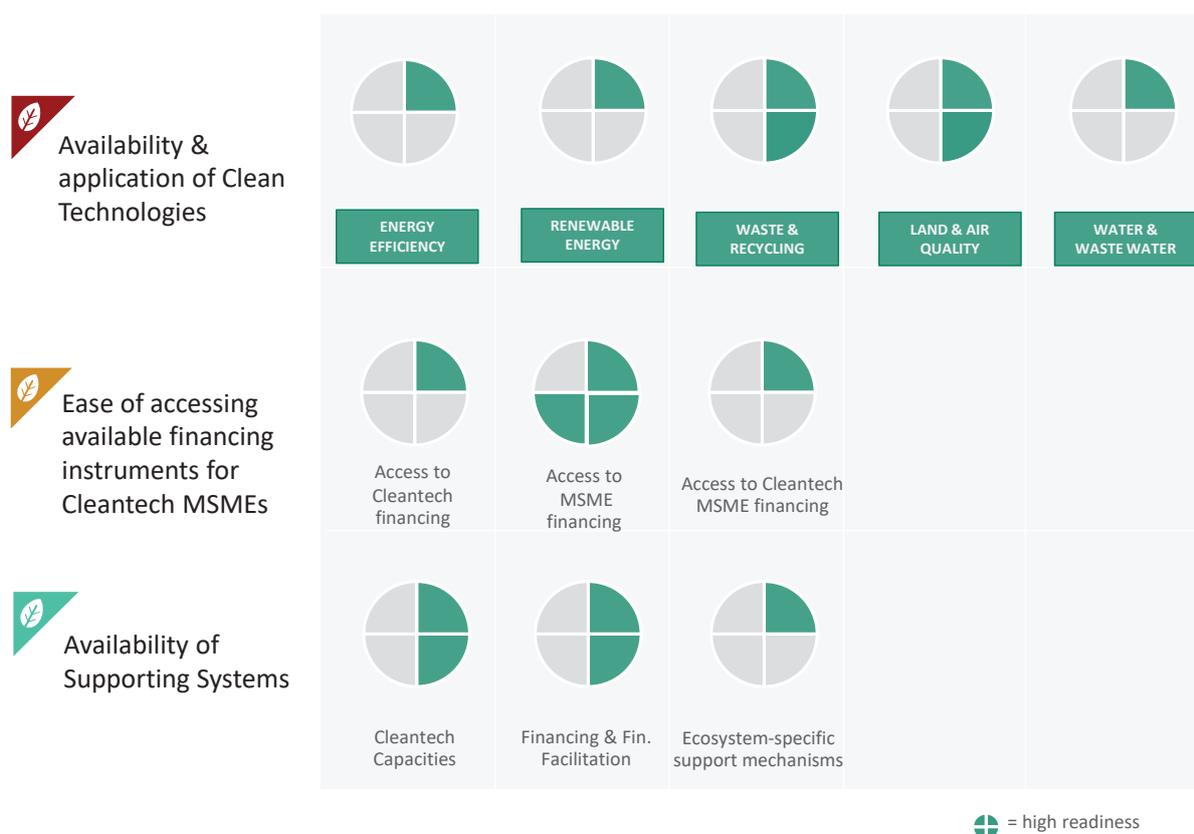
After zooming in detail into the different landscapes of MSMEs, financial institutions and intermediaries, it is time for a resume: How cleantech financing ready is Indonesia? From the status quo in relation to current sector trends, future developments and recommendations are given to set the stage for continuous joint ambitions for pushing the development of cleantech MSMEs in Indonesia.

The financing readiness of the three ecosystem level (MSMEs, financial institutions, intermediaries) shows that many gaps persist within the Indonesian cleantech financing sector. **Joint action is needed to overcome remaining challenges at each ecosystem level and upgrade the cleantech financing readiness.**

- **MSMEs:** Despite its strong entrepreneurial culture, the availability of clean technologies in Indonesia is low. Often, modern technical equipment is not produced locally, but imported. The high upfront investments to develop of clean technologies limit the availability and consequently the application of clean technologies. MSMEs significantly struggle to raise the initial development costs without being

able to present a sound business models to investors which constitutes a knock-out criterion for MSMEs to engage with cleantech but opt for business models with lower set-up costs. In terms of sectors, there is a clear bias in the availability of clean technologies focused around solutions for land and air quality related to Indonesia's strong agricultural sector and waste management. Significant pushes for other cleantech sectors remain low. Overall, clean technologies applied in Indonesia remain rather "low-tech" as compared to other countries.

- **Financial institutions:** The financing landscape is dominated by MSME-focused instruments. Financial institutions recognise the challenges of MSMEs to access finance and respond with targeted financial instruments. It is high time to extend the financial product portfolio with cleantech focused instruments that recognise the specific financing challenges of cleantech enterprises. Yet financial institutions struggle with the technical abilities for assessing cleantech investments. Scaling up innovative financing methods such as crowdfunding and blended finance offers high potential.



## Exhibit 28: ACMFN Indonesia Cleantech Financing Readiness

- Intermediaries:** Cleantech solutions are needed to meet and scale Indonesia's NDC commitments. However, awareness and about cleantech and targeted support to scale such solutions is limited. Intermediaries are often focused on strengthening business capacities. Cleantech-focused intermediaries are limited despite their high potential with expertise from both sides of the cleantech enterprise and the financial institution. More innovative and collaborative approaches are needed to leverage the potential of cleantech-focused and local intermediaries in spreading cleantech knowledge and bringing all ecosystem actors together to jointly promote the development of the cleantech market.

and related resource and cost efficiency. Consumers often do not know about the benefits of green products or have the perception that green products are more expensive than conventional products which does not necessarily reflect the reality. Overall, low cleantech awareness and knowledge impacts both the supply- and demand-side of cleantech.



*The awareness of people on cleantech is low. It is still a long way to go.*

*K1000Kebun*

### 5.1 Challenges in the Indonesian cleantech MSME ecosystem

Cleantech enterprises in Indonesia still face structural challenges at the ecosystem level that hinder to unlock their full potential for the transition to a low-carbon economy. An overarching challenge for the ecosystem is the **lack of awareness and knowledge about cleantech on all levels reaching from enterprises to financial institutions, intermediaries and consumers**. Enterprises and financial institutions have a limited knowledge about the business case of sustainable production

Consequently, the **demand for clean technology and green products is low**. Compared to other countries, the cleantech market in Indonesia is not yet very developed and still considered a niche market. Looking at other ACMFN project countries, China for example has a much more established market for cleantech. As stressed by Mekar, the incentives for cleantech investments are lacking. One potential reason could be the low energy costs in Indonesia<sup>26</sup> which impacts the cost reduction potential by energy efficiency measures for example.

### CLEANTECH START-UPS STILL HAVE SIGNIFICANT CHALLENGES

In Indonesia, major challenges include:

Lack of cleantech entrepreneurs



Cleantech entrepreneurs lack financial support

Lack of focused financing instruments for cleantech MSMEs



No banks have specific cleantech MSME financing programmes

Lack of cleantech knowledge exchange platforms



Exchange on cleantech is often in an informal manner



*The regulation in Indonesia is lacking behind*

*PNM*

impacts the development of the whole ecosystem and the major drawback holding back MSMEs to invest in cleantech. The sustainable finance movement in Indonesia has just started is not ready to focus on cleantech financing instruments yet but with some patience offers a promising development towards cleantech financing in the near future.

This process could be accelerated by matching policies. However, there are **no specific cleantech policies in place** that could support the uptake of cleantech financing from a policy perspective. An additional challenge faced by the government is the effective spending of government funds, which is noted by ACMFN-interviewed enterprises and needs to be resolved.

Related to the lack cleantech policies is the absence of legal standards, cleantech related certification and a common definition for green projects. A common ground would ease the approval of financing for cleantech projects notably, reduce transaction costs and simplify the technical assessment needed by financial institutions for loan approvals for example.



*Green products are still a niche market. There is need for education and awareness raising first.*

*K1000Kebun*

Some ACMFN-interviewees go as far as stating that **the entire ecosystem is lacking behind** which underlines the need to bring all actors together and join forces to build the cleantech market. Notably, the cleantech financing ecosystem is so far limited to urban areas mostly. The wide rural areas in Indonesia are often facing infrastructural challenges including the access to finance. While financial institutions are taking the first step working to connect rural communities to finance through local sales agents and mobile technologies, cleantech financing to reach rural area would come into focus in a much later step.



*The definition of green varies: There is the need to create the same perceptions.*

*YRE*



*The ecosystem around cleantech is lacking behind.*

*Mekar*

A key challenge that cuts across the ecosystem is the **lack of financial instruments for cleantech financing**. While this is a result of related challenges such as the limited technical capacities of financial institutions for example, it nonetheless

# KEY CHALLENGES



Exhibit 30: Key Challenges for Cleantech Financing

## 5.2 Current Trends in Cleantech Financing

Despite existing challenges, ACMFN stakeholders have already made important contributions to the Indonesian cleantech MSME market and the sector is slowly developing. Stakeholders with extensive experience have shared their views on trends and developments of the cleantech financing market with ACMFN and agreed that **cleantech is slowly evolving in Indonesia.**

The interviews revealed a pattern of increasing importance of sustainable food and waste management alike. In terms of the government, Paranti Composter points out that the government is increasingly open to reusing waste for example. Taking a technology and enterprise perspective, the general interest into clean technology is growing. For example, in October 2019, the Indo Cleantech Expo took place where enterprises exchange on technologies and trends on a B2B level. With increasing awareness and interest, comes increasing demand for green products, pointing out that the cleantech market is developing, though at a slow pace.



*There is a green trend in Indonesia.*

Aikma

Stakeholders pointed out an increasing interest and awareness about clean technologies. From the side of consumers, enterprises and Komunitas pointed out that consumers put an increasing importance to healthy lifestyles and green products.



*We witness an increasing demand for green and organic products and our market place event grows every year.*

KOI

As the market develops **more and more enterprises engage in cleantech** and it becomes apparent that **enterprises take up the green movement currently happening in Indonesia**. PNM pointed out an increase in waste-management enterprises for example. The way to increased knowledge about cleantech is paved by supportive technologies that ease the access to information. As mentioned by Aikma, the Internet plays an important role in accessing and spreading cleantech knowledge effectively. Through this, also remote farmers have the opportunity to increase their knowledge about cleantech but also to take part in Aikma-facilitated online discussions with peer-to-peer exchanges. Related to Komunitas, PUPUK stresses that through ACMFN support some Komunitas have gone entirely green and further Komunitas are on their way to become green. Consequently, Komunitas extent this trend towards their member enterprises.

Market growth is further triggered by the realisation that cleantech is needed to become a low-carbon economy and eventually to fulfil the NDCs and SDGs.



**We perceive a positive development by the government.**

*Mekar*

Further, policies and government support is catching up recently. Supported by the Sustainable Finance Roadmap by OJK and related environmental analysis training and assessment of green loans, financial institutions are empowered to take up green finance.



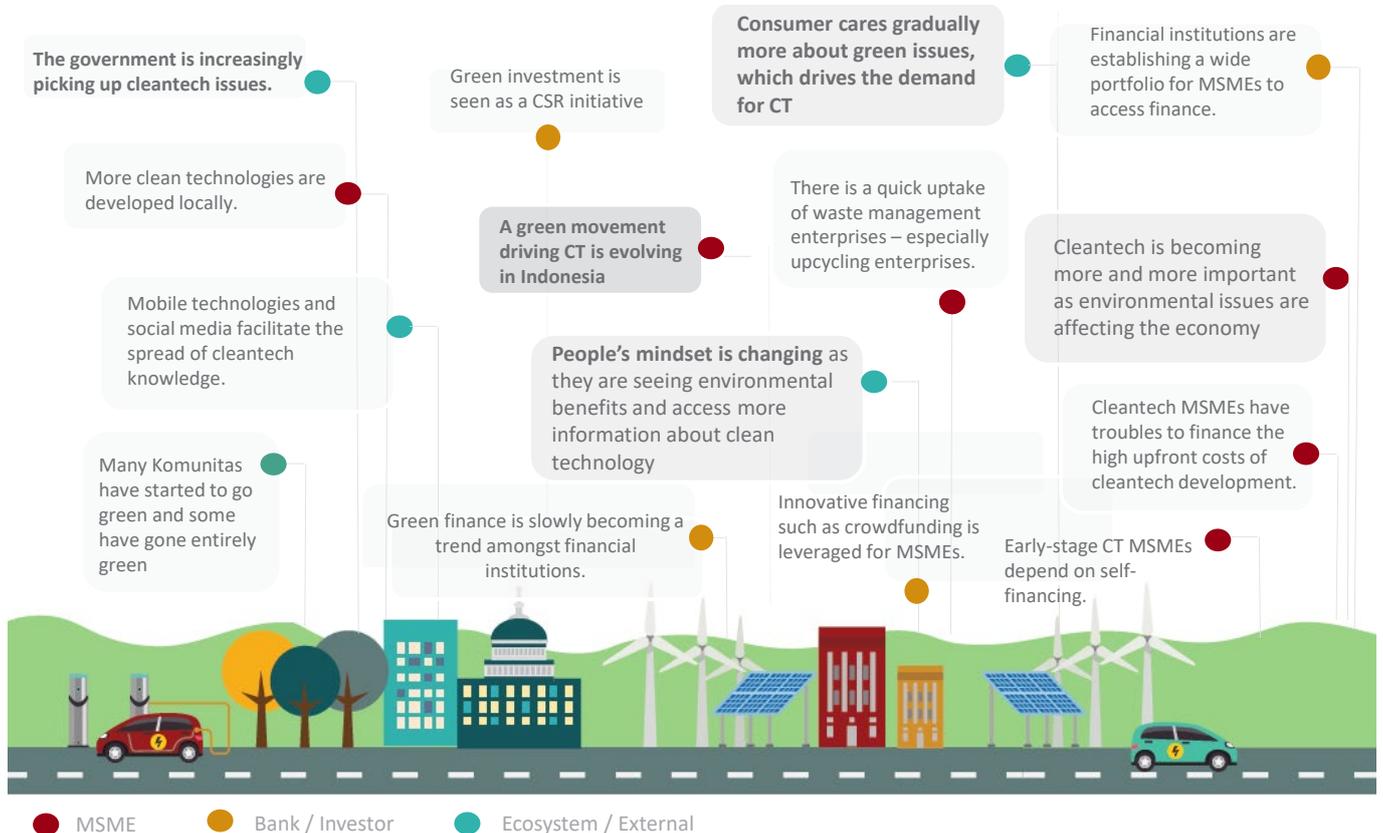
**There is no choice. It is becoming a necessity to be sustainable.**

*K1000Kebum*



**Green financing is a new trend for FIs. Even fintechs are taking up this trend.**

*PNM*



**Exhibit 31: Cleantech Trends in Indonesia**

### 5.3 Future Development of the Indonesian Cleantech Sector

ACMFN stakeholders highlight a slow, but positive development of the cleantech sector within the next years. Progressive action to support cleantech financing is being taken across all ecosystem levels, which however is highly needed to establish the Indonesian cleantech market. Despite the current immature cleantech market, experts predict that the fast growing economy of Indonesia will soon demand clean technology solutions<sup>27</sup>.

**ACMFN stakeholders emphasise that the development of the cleantech sector is a gradual evolution.**

The two main drivers of the green movement in Indonesia are: 1) Increasing awareness of sustainability on all ecosystem levels and 2) increasing governmental support for green policies

Overall, the cleantech financing sector in Indonesia will grow step by step. The current focus of the financing sector is on MSMEs and social impact. The next big step will be the shift towards a focus on cleantech financing.

Through its project activities and engagement in the sector, ACMFN has contributed to these developments in the past years. ACMFN has evidently taken up an important role of promoting clean technology development and adoption in Indonesia and effectively supports these MSMEs in accessing finance.

**Through initiating prior non-existent cleantech MSME financing networks around Bandung and Jakarta, ACMFN has paved the way to scale up the Indonesian cleantech sector.**



*There is a large potential within the next 5-10 years.*

K1000Kebum

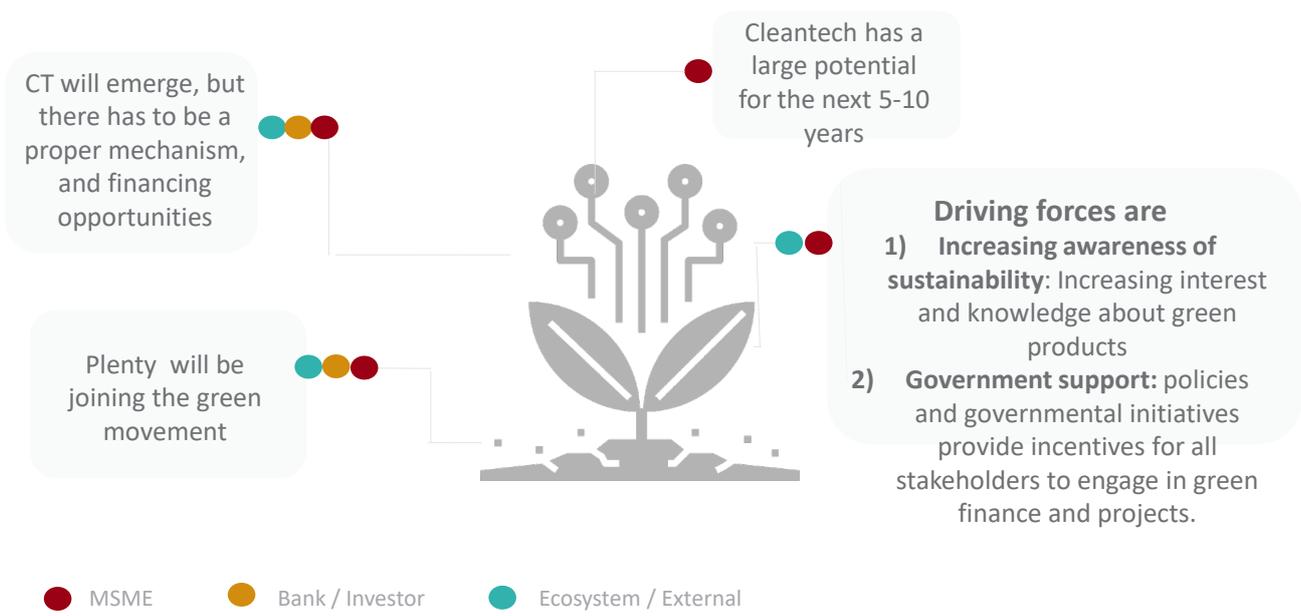


Exhibit 32: Future Development of the Chinese Cleantech Sector

### 5.4 The Way Forward: Addressing Ecosystem Challenges

ACMFN-stakeholders have come up with a set of solutions to tackle barriers at the different levels, relevant to all stakeholder groups. The following compilation reflects the opinions of numerous ACMFN-stakeholders and intends to be a selection of possible solutions to the challenges identified in earlier chapters.

**3**

**Cross-actor collaboration**

Develop targeted financing instruments for MSMEs to develop (CT) and implement (CP) cleantech

**4**

**Tailored financing instruments**

Develop targeted financing instruments for MSMEs to develop (CT) and implement (CP) cleantech

**2**

**Local ecosystems**

Local ecosystems can be leveraged to spread cleantech awareness and knowledge effectively.

Expand cleantech knowledge of banks and develop a definition of “green”

**5**

**Government support**

Leverage the power of policies to boost the cleantech market

**1**

**Cleantech education**

An exchange on cleantech knowledge shall be stimulated at all ecosystem levels



= MSME = Intermediaries = Financer

**Exhibit 33: Solutions Catalogue**



## 6. OUTLOOK AND ROADMAP

In the light of Indonesia's environmental and societal challenges such as high carbon emissions, deforestation and waste, the country faces the task of recognising and realising the potential of clean technology to address these challenges. MSMEs are the backbone of the Indonesian economy with a large opportunity to stem the country's transition into a low-carbon economy from the ground. The availability of relevant clean technologies in the main sectors energy efficiency, renewable energy, waste and recycling, land and air quality and water and waste water, as well as current flows of cleantech MSME finance remain insufficient to capitalise this opportunity.

Joint interventions are required to help enterprises overcome major barriers and provide an enabling environment to become pioneers of change.

At the national level, stakeholders should come together to develop a long-term, coherent strategy around cleantech financing. In addition, a combination of concrete next steps by financiers, intermediaries and MSMEs is needed to foster cleantech innovation and application, scale up the cleantech investment environment and continue the legacy of ACMFN:

**To realise the potential of cleantech MSMEs for Indonesia's sustainable development, active support from all stakeholders in the cleantech ecosystem is necessary to boost the cleantech financing "readiness" in Indonesia.**



### MSMEs

#### **Raising awareness and education on cleantech through innovative business models**

*A powerful example to increase awareness about cleantech is through cleantech MSMEs themselves and incorporating it into the business model of CT enterprises. Alongside the provision of CT products, enterprises could provide training on CT measures, do-site visits and attend events to explain their technologies and educate on the quality, material and benefits of technologies.*

#### **Promoting government incentives and support**

*Governmental incentives for cleantech can support on multiple fronts. On the one hand, incentives to opt for plastic alternatives for example can stimulate the demand for cleantech. On the other hand, investment incentives and schemes especially for early-stage enterprises can encourage private investors to co-invest. Targeted blended finance instrument can enable this effect on a large-scale.*



### INTERMEDIARIES

#### **Foster cross-actor collaboration for cleantech education**

Intermediaries can leverage their position as a middle-man between all relevant stakeholders including enterprises, financial institutions, consumers, society and policy as well. Further, the in-depth knowledge of intermediaries about the stage of enterprises could be leveraged more in their work with financial institutions to reduce the risks for investors based on intermediary recommendations.

#### **Leverage the power of intermediaries to spread the cleantech movement on the local level**

Through PUPUK's work on the ground implementing ACMFN activities, experience has shown that a key aspect related to clean technology development and application is to focus on the local ecosystem. It would therefore be highly effective to leverage the local networks and peer-learning opportunities of Komunitas further and set up additional clusters across the country.



### FINANCIAL INSTITUTIONS

#### **Broaden knowledge base about clean technologies and resource saving potentials**

Due to the large cleantech investment potential and financing needs, financial institutions should actively broaden their knowledge base on cleantech market potentials in relation to financing options and opportunities.

#### **Develop targeted cleantech financing instruments through blended finance**

In order to address the gap of accessing cleantech financing, investors shall connect with other financial institutions to co-create cleantech focused blended finance instruments to mobilise public and private finance for cleantech investments.



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