ASEAN Sustainable Consumption Loop

Limiting waste and sustaining capabilities in ASEAN communities through real-time information cloud

Team Amplify - Philippines

University of the Philippines Visayas
Francis Nacionales
Erru Torculas

ASEAN DATA SCIENCE EXPLORERS

Aida, 24. Environmental advocate and farmer's daughter from the Philippines.

Image Source: Asian Development Bank, Farmer's Photograph
https://www.adb.org/news/adb-help-boost-farm-incomes-philippines-400-million-loan

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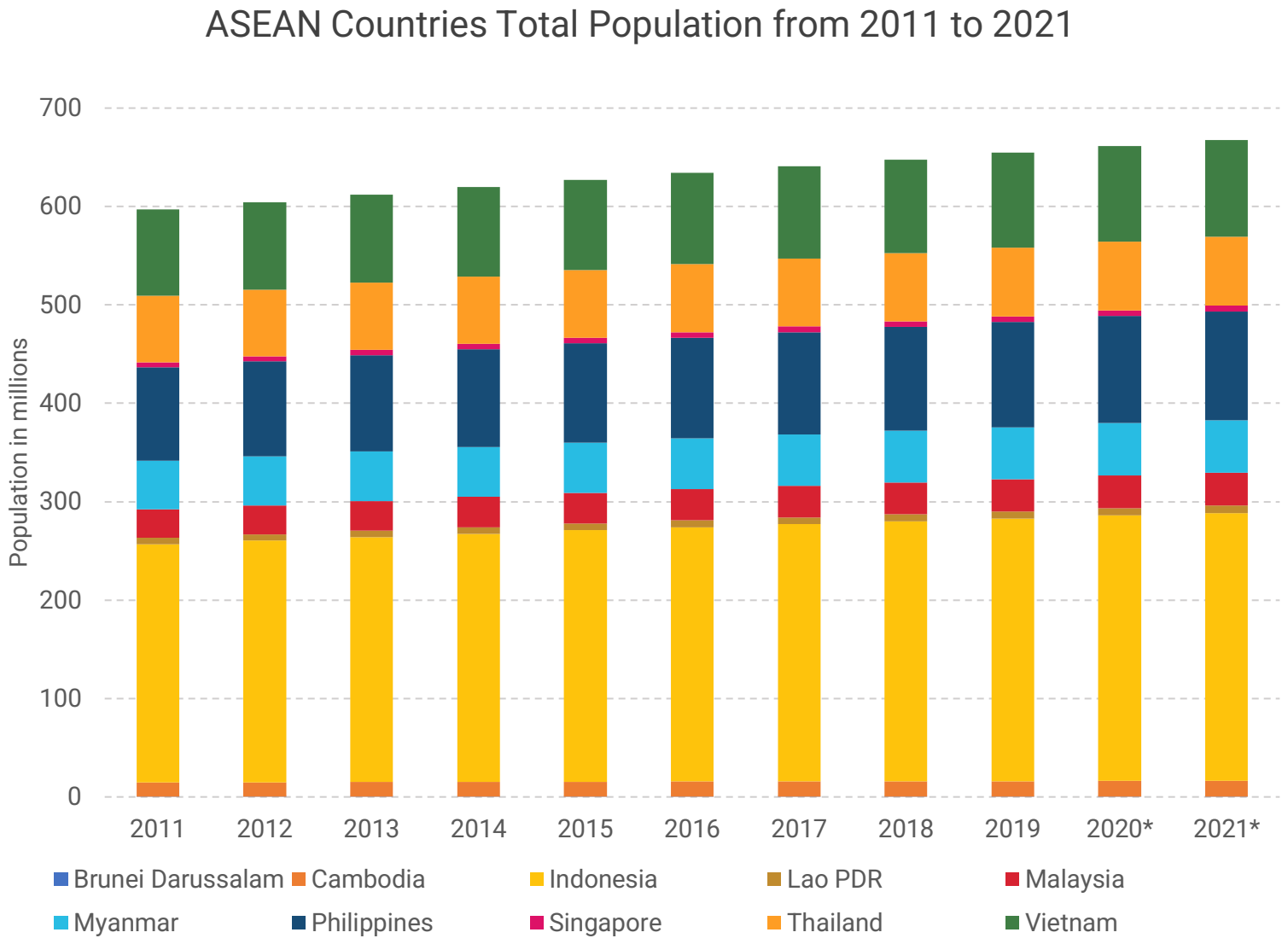
The increasing urbanization has merited waste management dilemmas, hence interfering with sustainable production and consumption

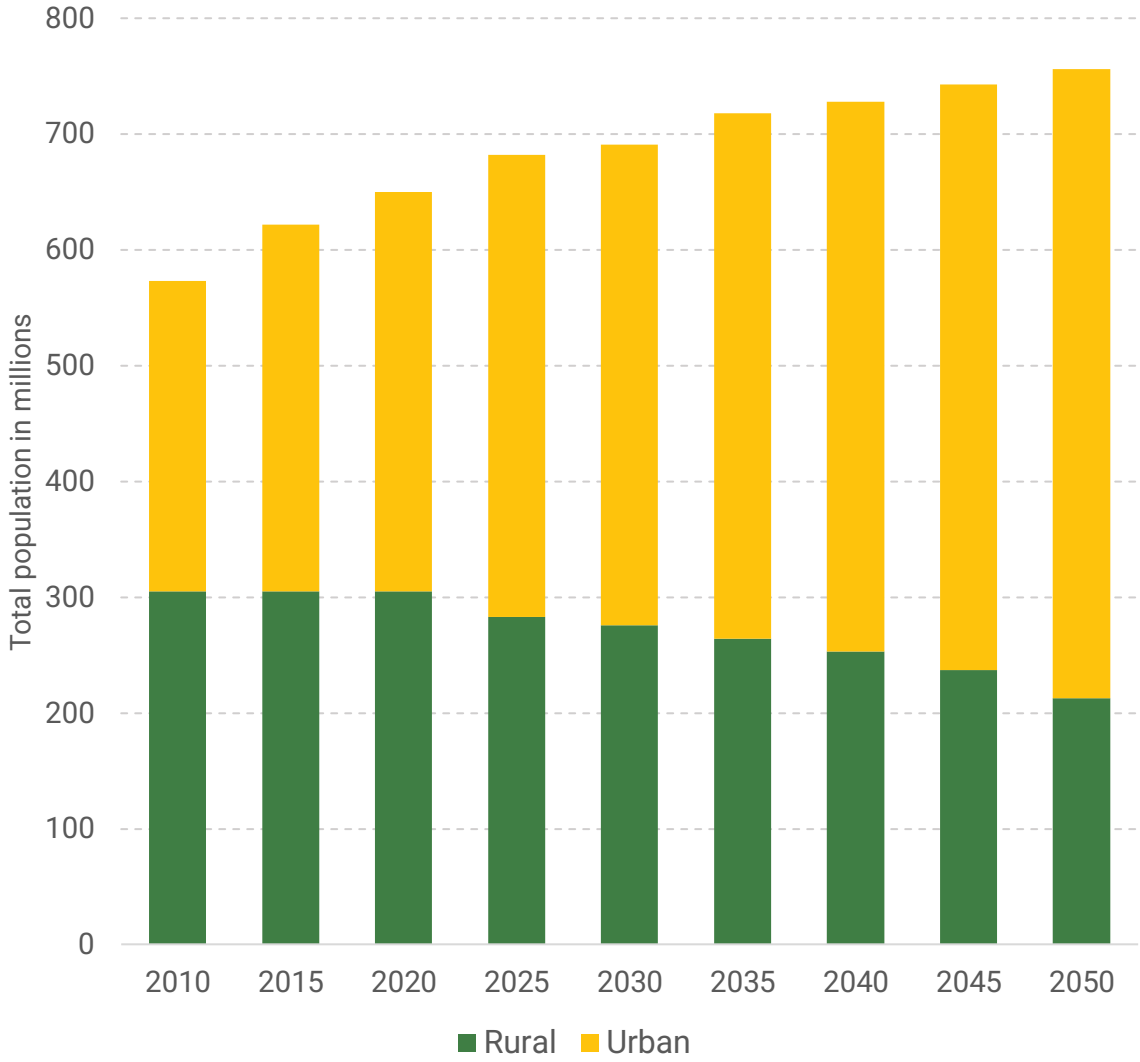


Population in ASEAN countries have seen a steady increase throughout the years

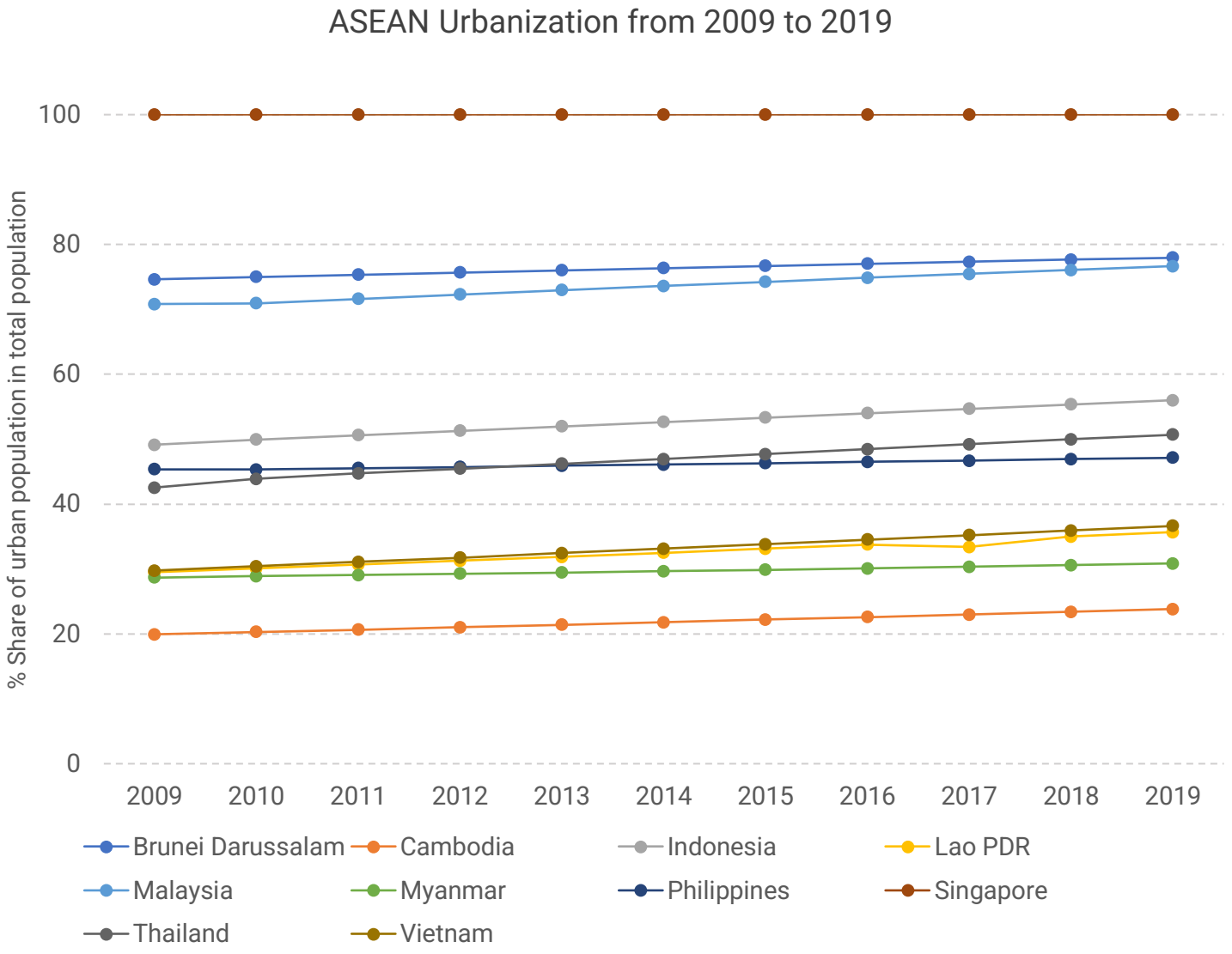
*projected population
Source: Aaron O'Neill (2021). Statista 2021
https://www.statista.com/statistics/796222/total-population-of-the-asean-countries/

Migration from rural areas to cities is a byproduct of rapid urbanization.

ASEAN Projected Population Projection in Urban and Rural Areas in year 2050



Source: Fouth ASEAN State of the Environment Report 2009, United Nations Environment Programme Summary Report 2017
https://environment.asean.org/wp-content/uploads/2020/03/Summary-Report-Waste-Management-in-ASEAN-Countries-UNEP.pdf

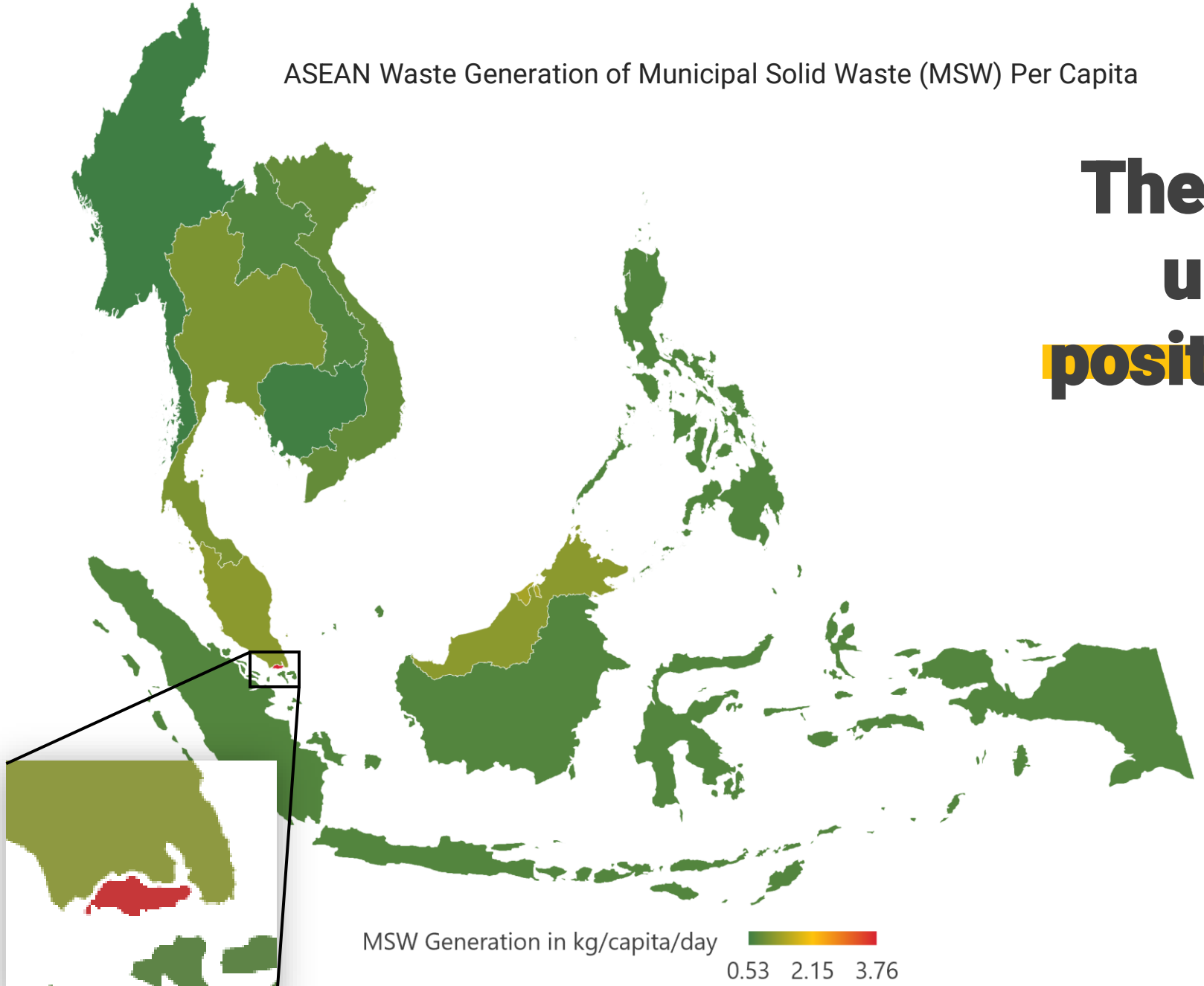


The ASEAN has shown increasing shifts to urbanization over time.

11 SUSTAINABLE CITIES AND COMMUNITIES

Source: The World Bank. United Nations Population Division. World Urbanization Prospects: 2018 Revision https://data.worldbank.org/indicator/SP.URB.TOTL.IN.ZS?locations=4E

ASEAN Waste Generation of Municipal Solid Waste (MSW) Per Capita



The rapid growth in urban population positively correlates with waste generation.

11 SUSTAINABLE CITIES AND COMMUNITIES

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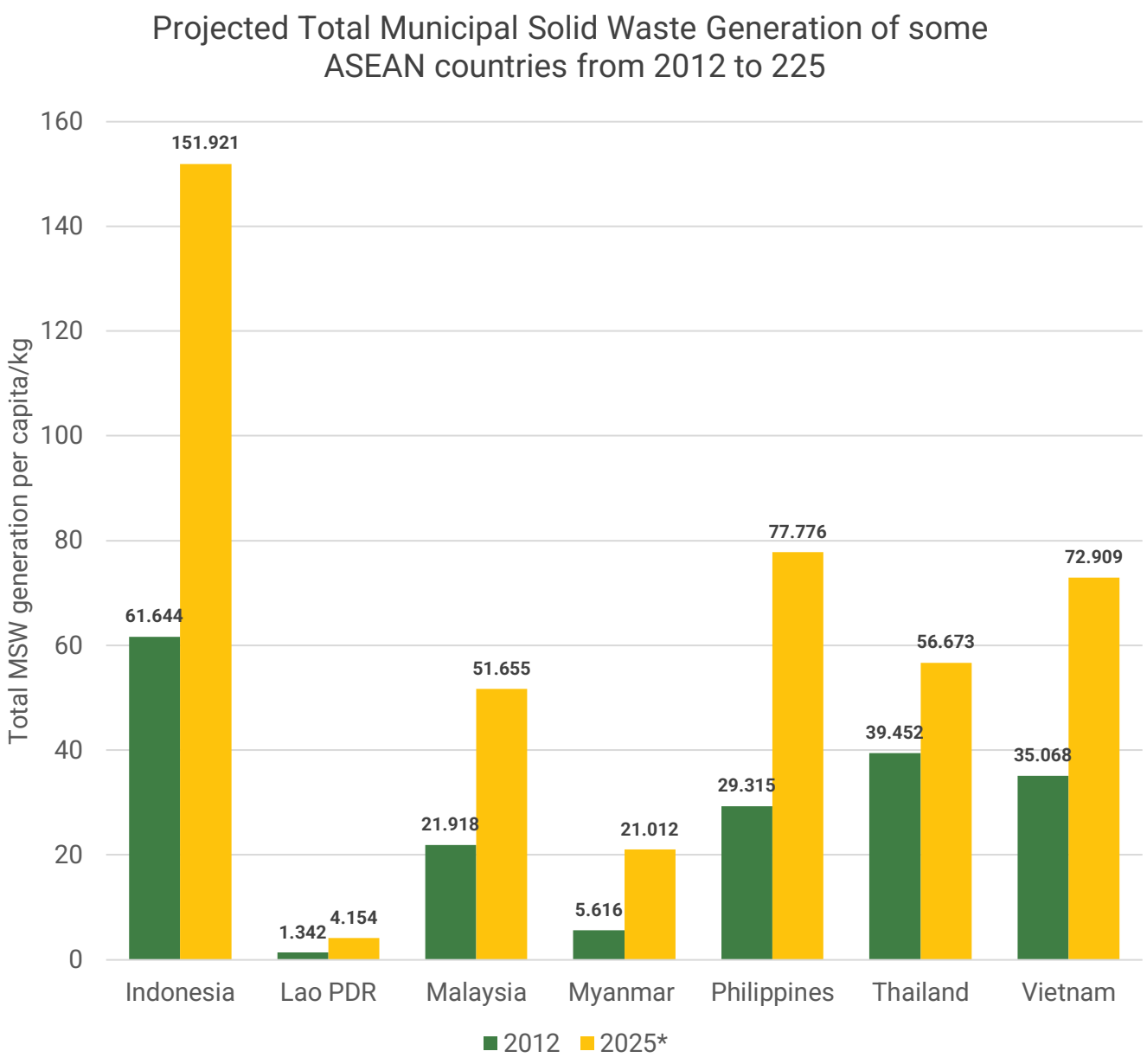
Source: Fouth ASEAN State of the Environment Report 2009, United Nations Environment Programme Summary Report 2017
https://environment.asean.org/wp-content/uploads/2020/03/Summary-Report-Waste-Management-in-ASEAN-Countries-UNEP.pdf



12 RESPONSIBLE CONSUMPTION AND PRODUCTION

The total municipal solid waste generation is projected to double by 2025

*projected total MSW Generation in 2025
Source: Fifth ASEAN State of the Environment Report (2017)
https://environment.asean.org/wp-content/uploads/2018/01/SOER5.pdf

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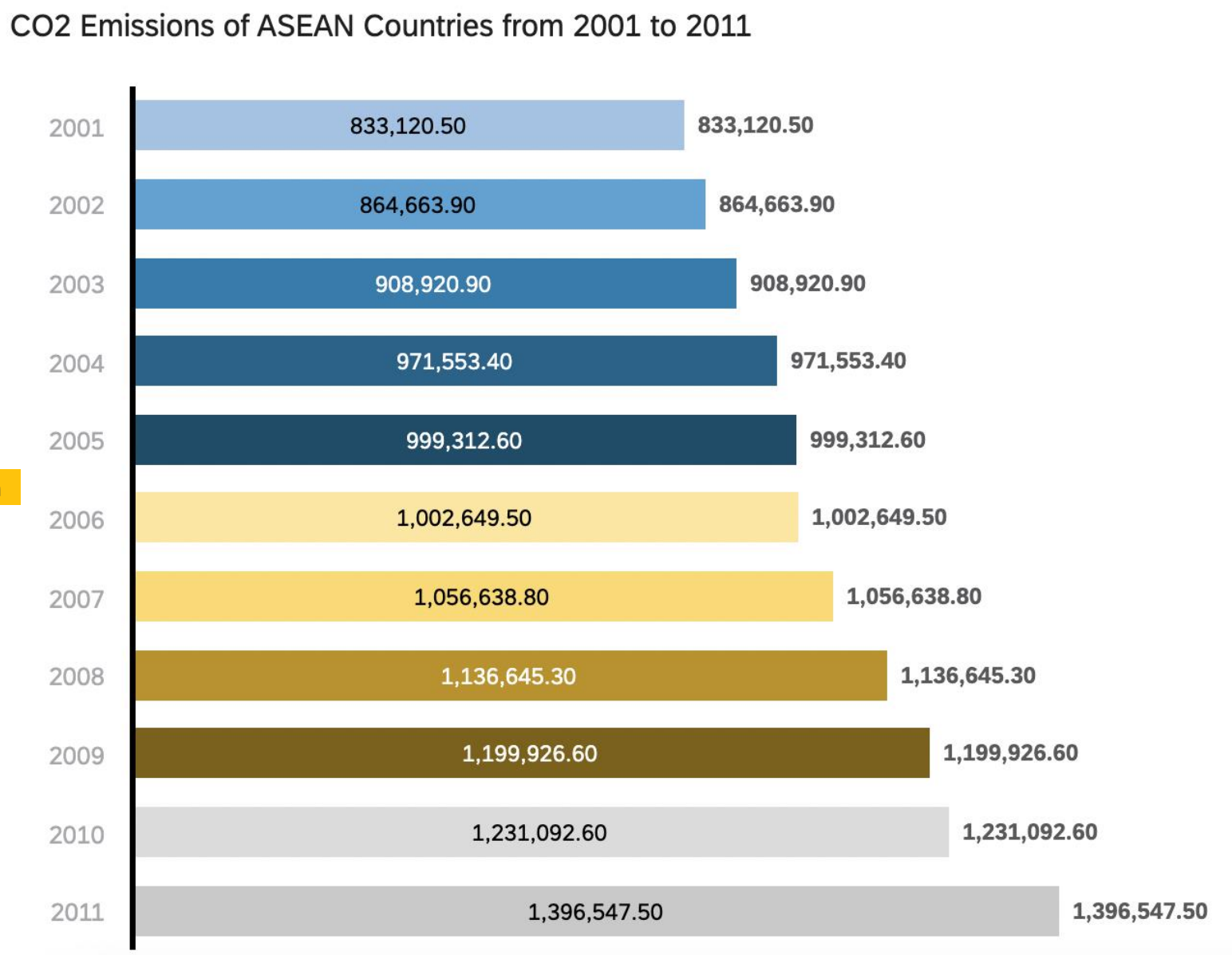
Increase in waste generation is parallel to the increase in CO2 emissions.



Source: ASEAN Secretariat Statistical Booklet
https://drive.google.com/drive/folders/1pTLmBgluFCQsd3th2yI8CCiPepfxACpr

Higher demand, higher production, higher volume of waste generated

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

In the Philippines, waste management is made more complicated by the acceleration in urbanization.

74%

Waste produced by households

35,580 tons

Everyday generation of garbage

Only 40-85%

Waste Generated is collected nationwide

Source: Castillo & Otoma (2013). Status of Solid Waste Management in the Philippines
https://www.jstage.jst.go.jp/article/jsmcwm/24/0/24_677/_pdf#:~:text=About%2035%2C580%20tons%20of%20garbage,urban%20and%20rural%20areas%2C%20respectively

What will happen to AIDA now?

12 RESPONSIBLE CONSUMPTION AND PRODUCTION
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uptrack

An information-driven communication system to monitor production, consumption, waste management, and trade priorities through cloud computing.

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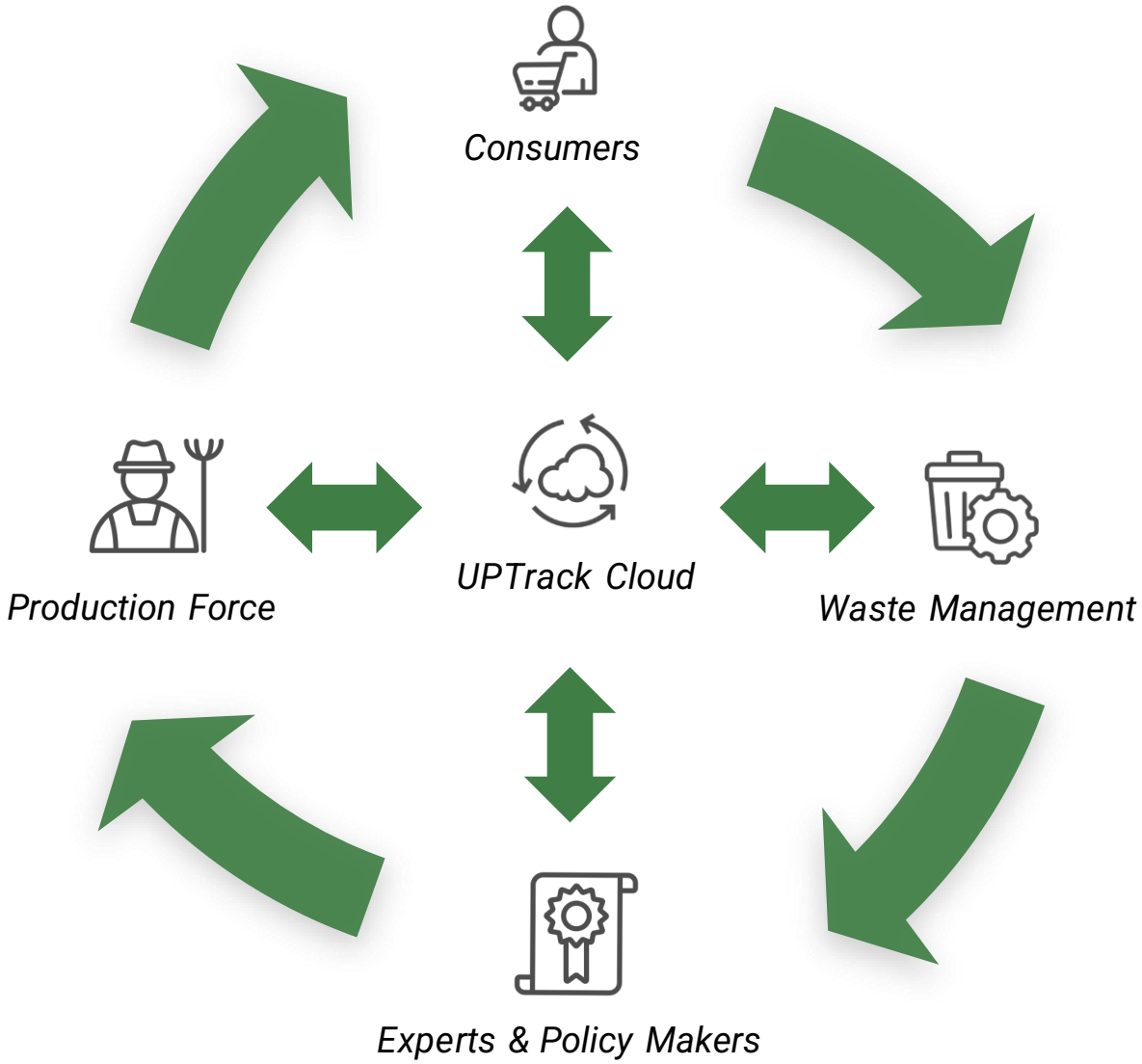
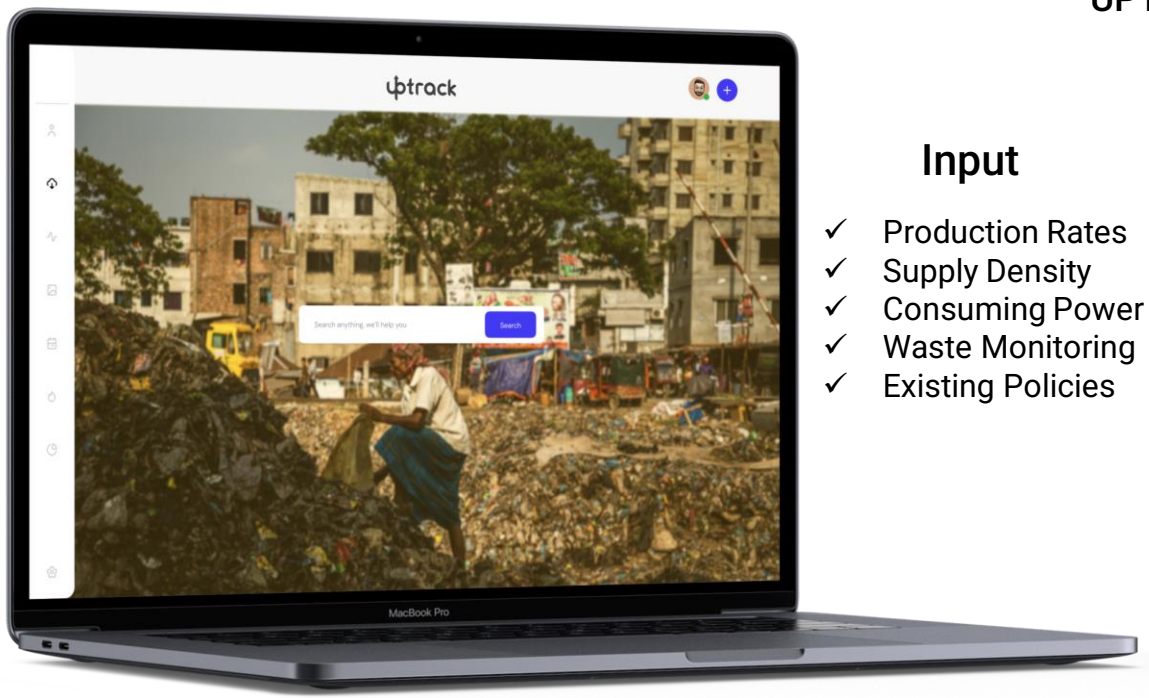
UPTrack framework



Real-time information means real-time informed decisions

UPTrack Cloud

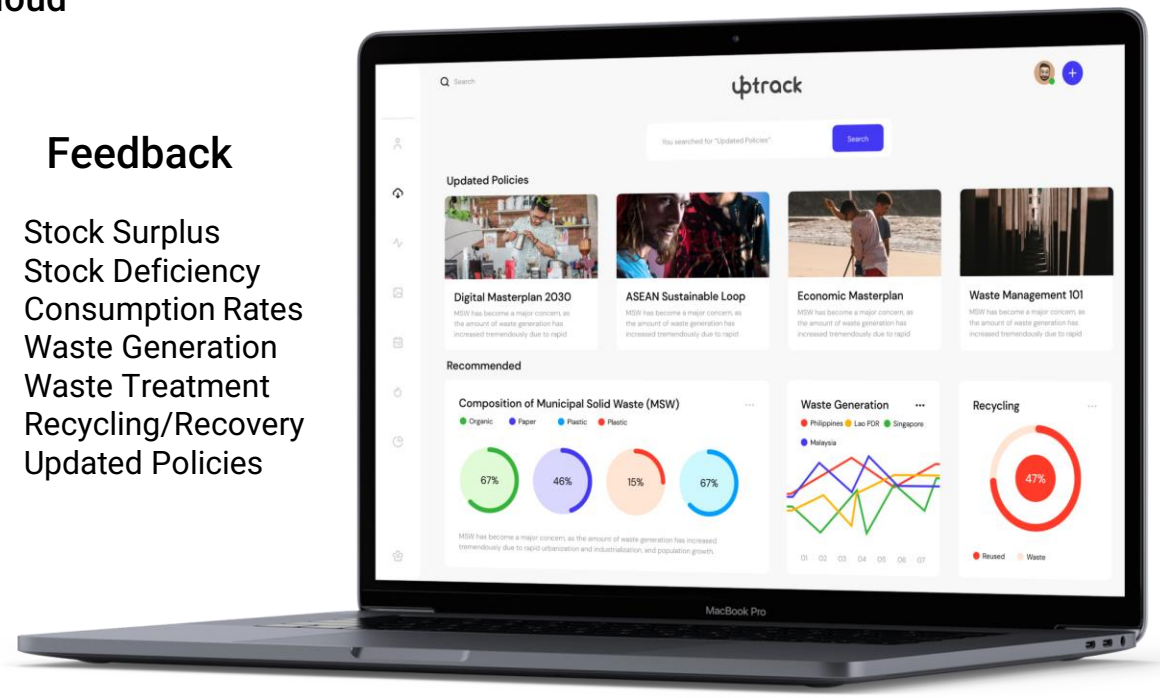


Input

- ✓ Production Rates
- ✓ Supply Density
- ✓ Consuming Power
- ✓ Waste Monitoring
- ✓ Existing Policies

Feedback

- ✓ Stock Surplus
- ✓ Stock Deficiency
- ✓ Consumption Rates
- ✓ Waste Generation
- ✓ Waste Treatment
- ✓ Recycling/Recovery
- ✓ Updated Policies



VIDEO: Team Amplify – UPTrack
https://drive.google.com/file/d/1DyxQe95Zv6R8N1J7ffvHJnuoNn01bLUU/view?usp=sharing

UPTrack feasible focal points

Waste Tracking

Effective waste tracking will identify possible water and land polluters and hold them accountable of their actions

Recycling Facilities

Making the existence of recycling facilities parallel with our waste production is crucial. This will balance the waste inputs with repurposed outputs.

Transportation

Vital in importing needs and exporting surplus; makes trade prioritization possible across ASEAN nations.

Education

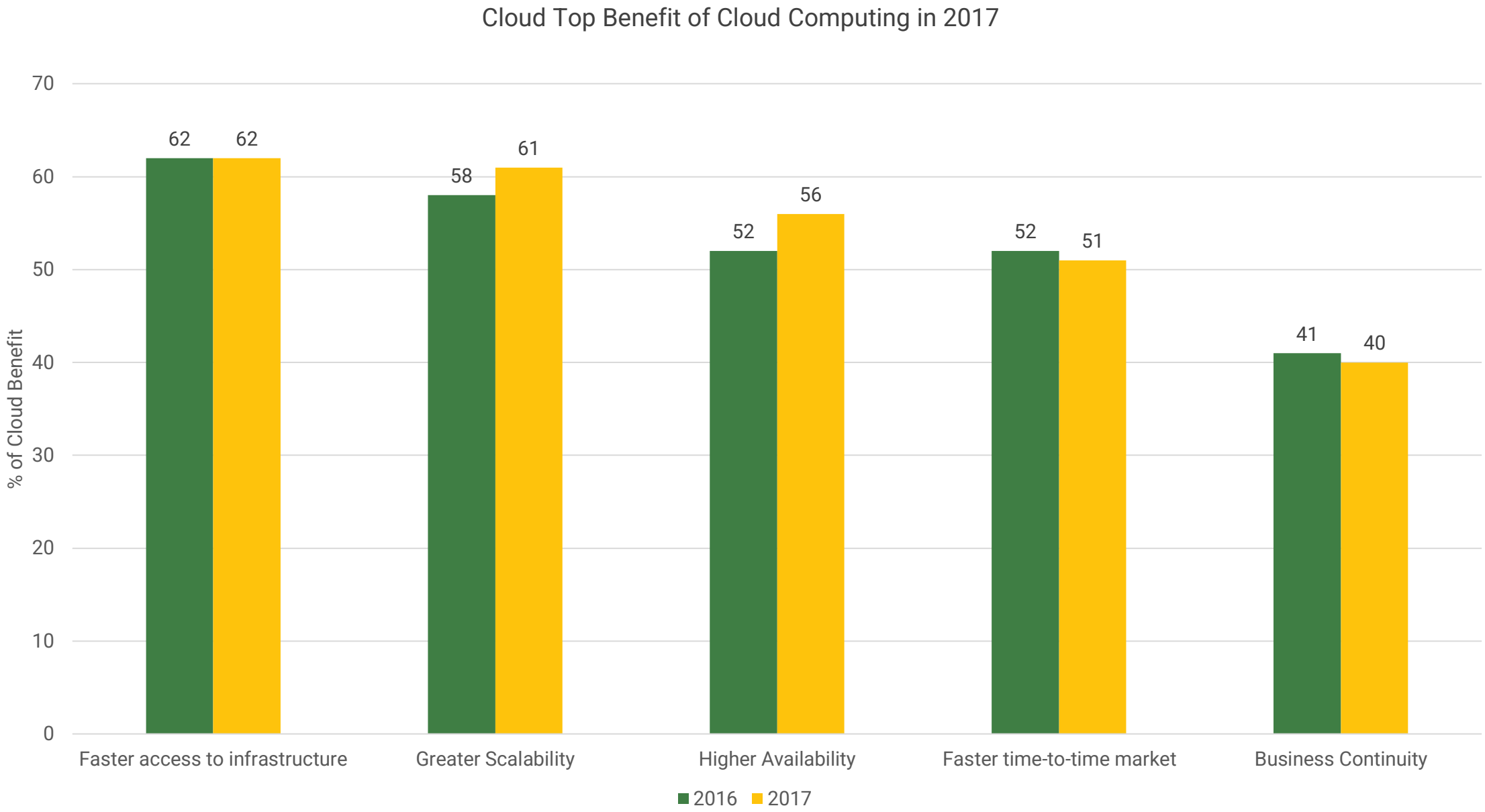
The importance and benefits of sustainable living, the climate crisis, and current analytics should be made available to the general public.

Product Development

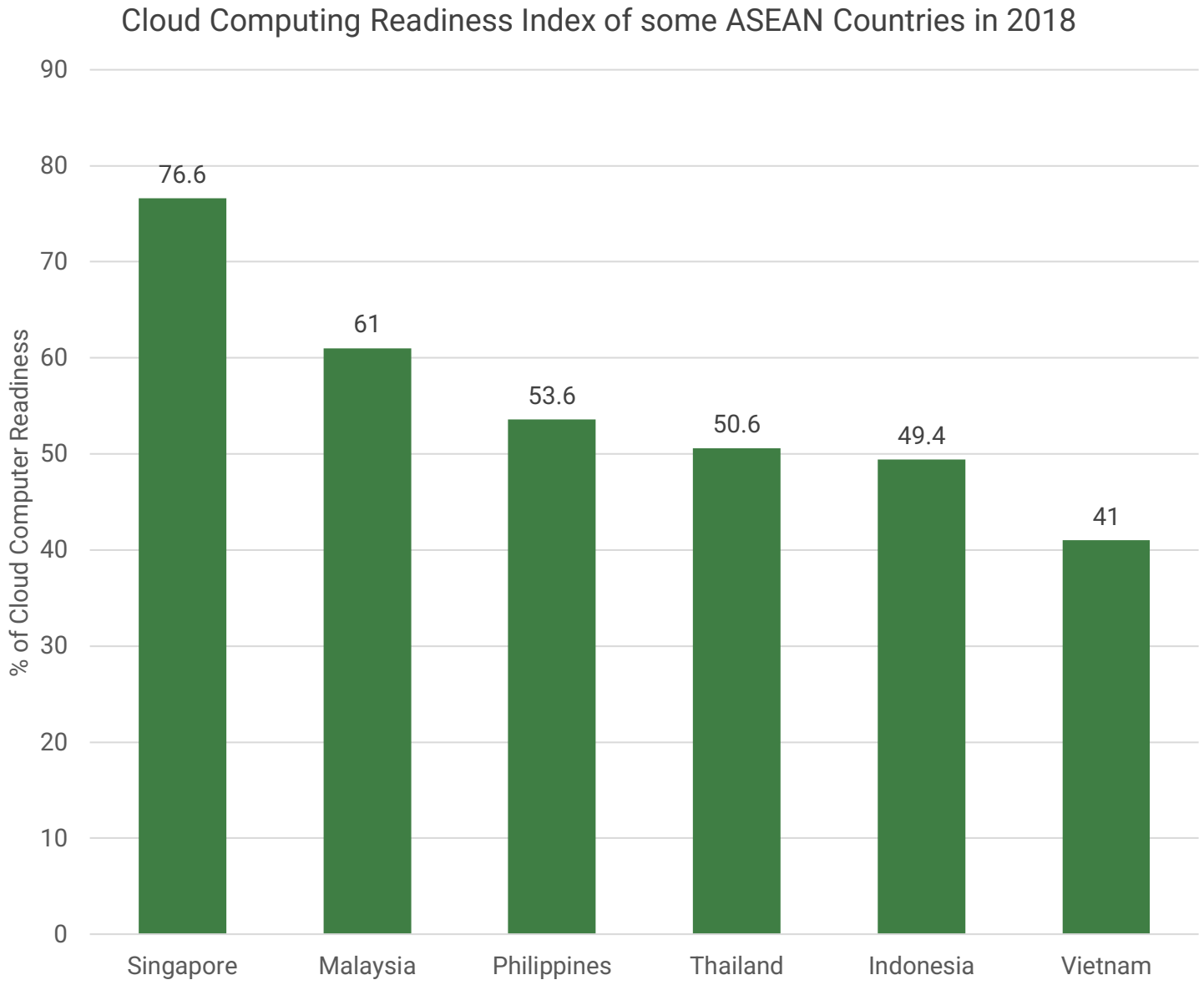
Developing sustainable packaging and product prolonging technologies will lessen waste materials

The ASEAN Digital Masterplan 2025 envisions a substantial portion of the population being on broadband devices; leaning towards the use of cloud services.

Source: ASEAN Digital Masterplan 2025
https://asean.org/storage/ASEAN-Digital-Masterplan-2025.pdf



Source: *Asyran Zarizi Bin Abdullah et al. (2020). A Review of Cloud Computing Implementation in ASEAN Countries.* https://www.researchgate.net/publication/342050010_A_Review_of_Cloud_Computing_Implementation_in_ASEAN_Countries



It's time to adopt cloud-based solutions in ASEAN.

Source: *Asyran Zarizi Bin Abdullah et al. (2020). A Review of Cloud Computing Implementation in ASEAN Countries.* https://www.researchgate.net/publication/342050010_A_Review_of_Cloud_Computing_Implementation_in_ASEAN_Countries

Target **11.6**

Indicator 11.6 .1

Proportion of urban solid waste regularly collected and with adequate final discharge out of total urban solid waste generated, by cities

Target **12.3**

Indicator 12.3 .1

By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses; Global food loss index

Target **12.5**

Indicator 12.5 .1

By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse; National recycling rate, tons of material recycled

Target **12.7**

Indicator 12.7 .1

Promote public procurement practices that are sustainable, in accordance with national policies and priorities; Number of countries implementing sustainable public procurement policies and action plans

Target

12.8

Indicator 12.8 .1

Extent to which (i) global citizenship education and (ii) education for sustainable development (including climate change education) are mainstreamed in (a) national education policies; (b) curricula; (c) teacher education; and (d) student assessment

Target

13.2

Indicator 13.2 .1

Number of countries that have communicated the establishment or operationalization of an integrated policy/strategy/plan which increases their ability to adapt to the adverse impacts of climate change, and foster climate resilience and low greenhouse gas emissions development in a manner that does not threaten food production (including a national adaptation plan, nationally determined contribution, national communication, biennial update report or other)

Target

13.3

Indicator 13.3.2

Number of countries that have communicated the strengthening of institutional, systemic and individual capacity-building to implement adaptation, mitigation and technology transfer, and development actions

By 2025, the following goals of ASEAN Socio-Cultural Community (ASCC) and ASEAN Economic Community (AEC) blueprints will be accomplished

Engaged Stakeholders in ASEAN processes

Section A.1 ASCC

Sustainable Consumption and Production

Section C.1 ASCC

Effective, Efficient, Coherent and Responsive Regulations, and Good Regulatory Practice

Section C.4 ASCC

Conservation and Sustainable Management of Biodiversity and Natural Resources

Section B.4 AEC

Productivity-driven Growth, Innovation, Research and Development, and Technology Commercialization

Section B.7 AEC

Section C.4 ASCC

Sustainable Economic Development

Source: ASEAN Socio-Cultural Community Blueprint 2025
https://asean.org/storage/2016/01/ASCC-Blueprint-2025.pdf

Communication-centered technology roadmap

A comprehensive step-by-step plan to execute the ASEAN sustainable consumption loop by setting reasonable targets and planning proper execution

2021-2022

- Network establishment
- Seek funding for cloud development
- Digital compatibility testing
- Establish working analytics powered by SAP

2023-2025

- ASCL cloud launching
- Cooperation with relevant ASEAN departments
- Consistent connection with NGOs and LGUs
- Garnering of expert advise for further development

- ASCL enhancements and necessary modifications
- Opening cloud to public
- Policy and economic suggestions
- Waste management strategies reinforcement

2026-2030

- Stable and consistent ASCL cloud utilization
- Supply adjustment and justified allocations
- Less waste through knowledgeable production
- Community targeted enablement programs

We can UPTrack AIDA's
future.

12 RESPONSIBLE CONSUMPTION AND PRODUCTION
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Information and Dataset References

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Are you UP for the challenge?