

Co-creating the National Long-term Roadmap to Synergise Mitigation and Adaptation in ASEAN Case of Viet Nam



Increasing
diversification
via intercropping



Optimize use of
chemical fertilizers



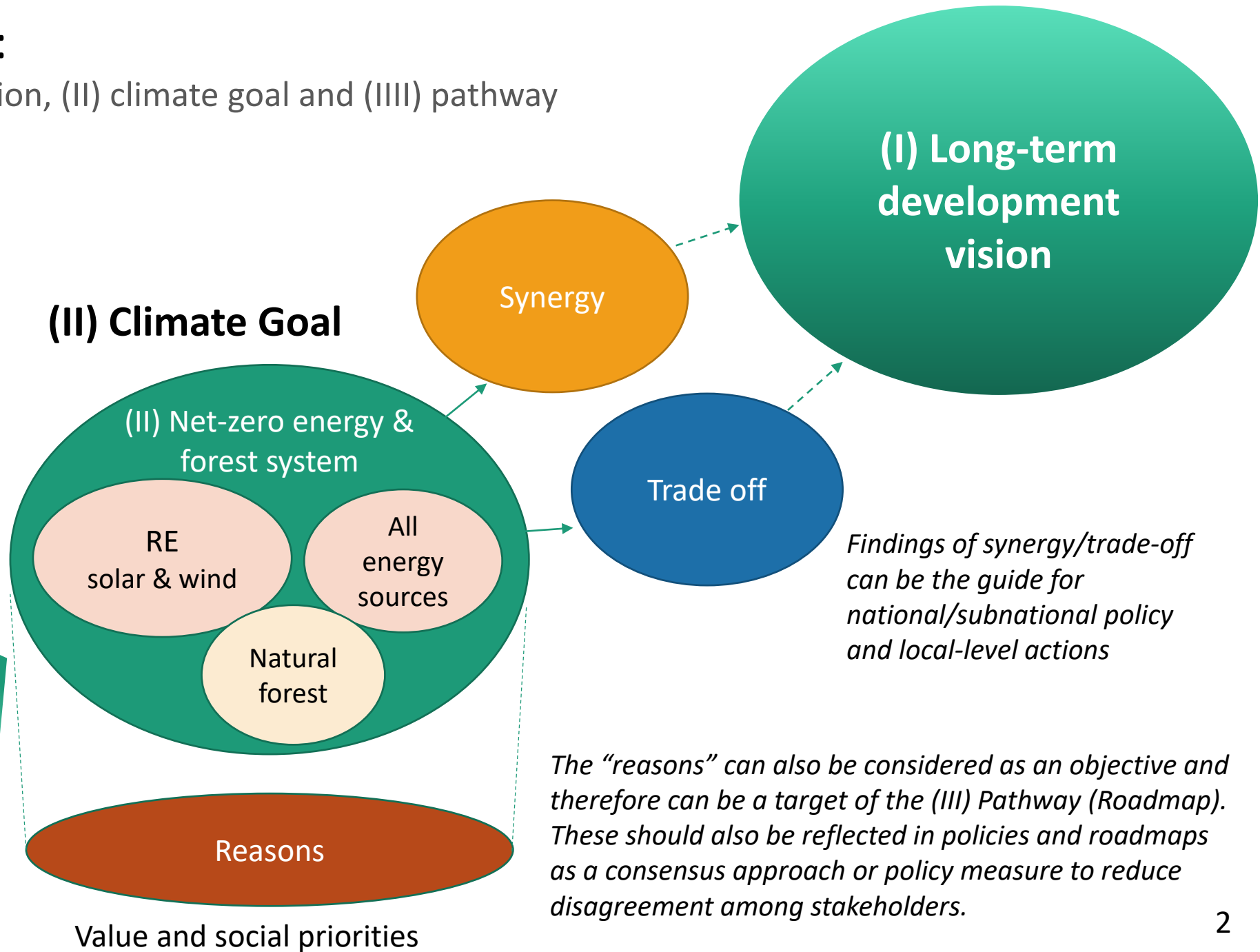
1st November 2024

Three-layer structure:

(I) long-term development vision, (II) climate goal and (III) pathway

Purpose of analysis

- To investigate the distribution of climate goals, reasons, and synergy/trade-off
- To examine the potential linkages between the synergy and long-term development vision



Part II: Mitigation
Pathway with
Renewable Energy

Part I: Long-term
Development
Vision and
Climate Goals



Part III. Synergizing
Adaptation with
Net-zero Mitigation
Pathway

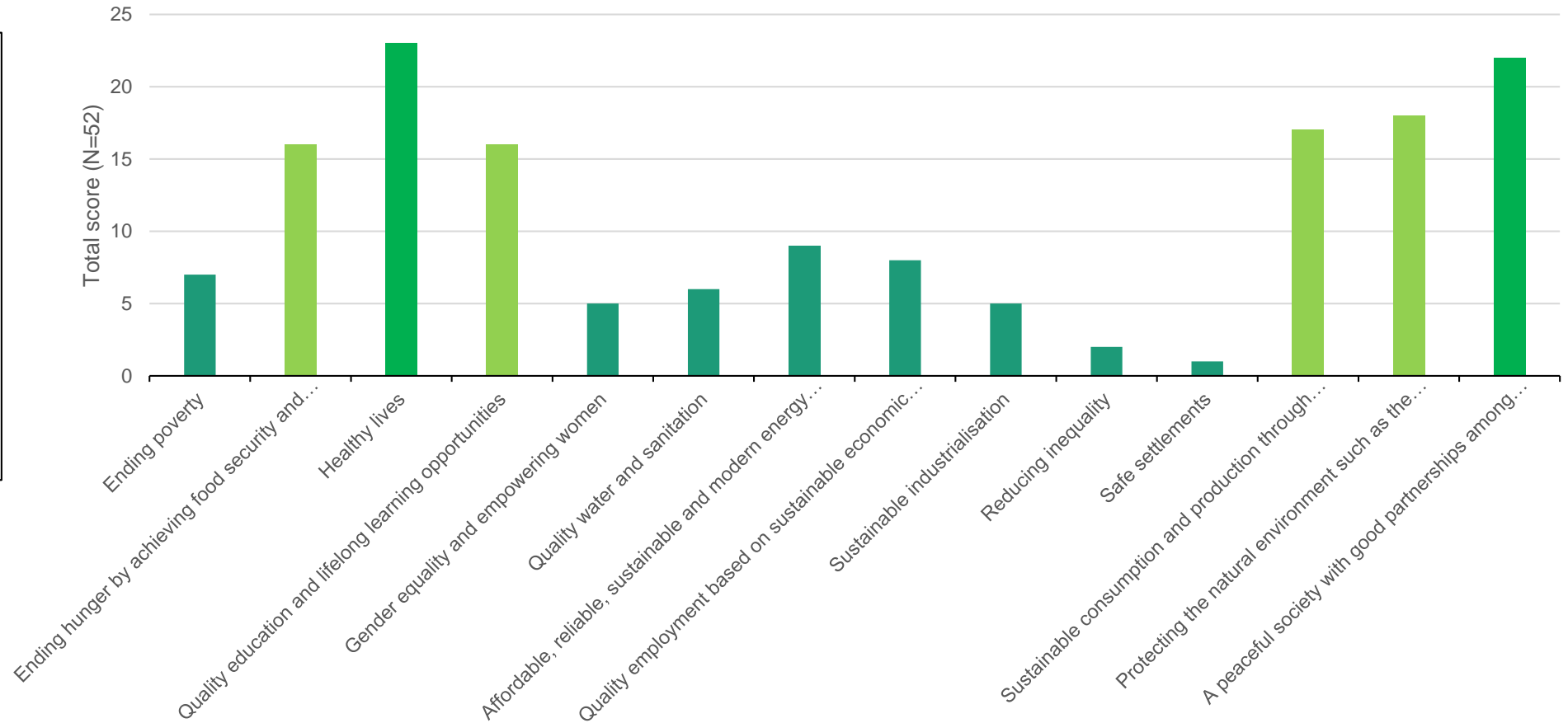


Part I: Long-term national development vision for 2100

Development priorities in 2100

- Highly scored: 1. Healthy lives, and 2. Peaceful society
- Moderately scored: 3. Protecting environment, 4. Sustainable consumption and production (3R), 5. Ending hunger, 6. Quality education.

*1.1.2.
What development elements do you hope to achieve as a long-term development vision of your country? (Around the year 2100).*



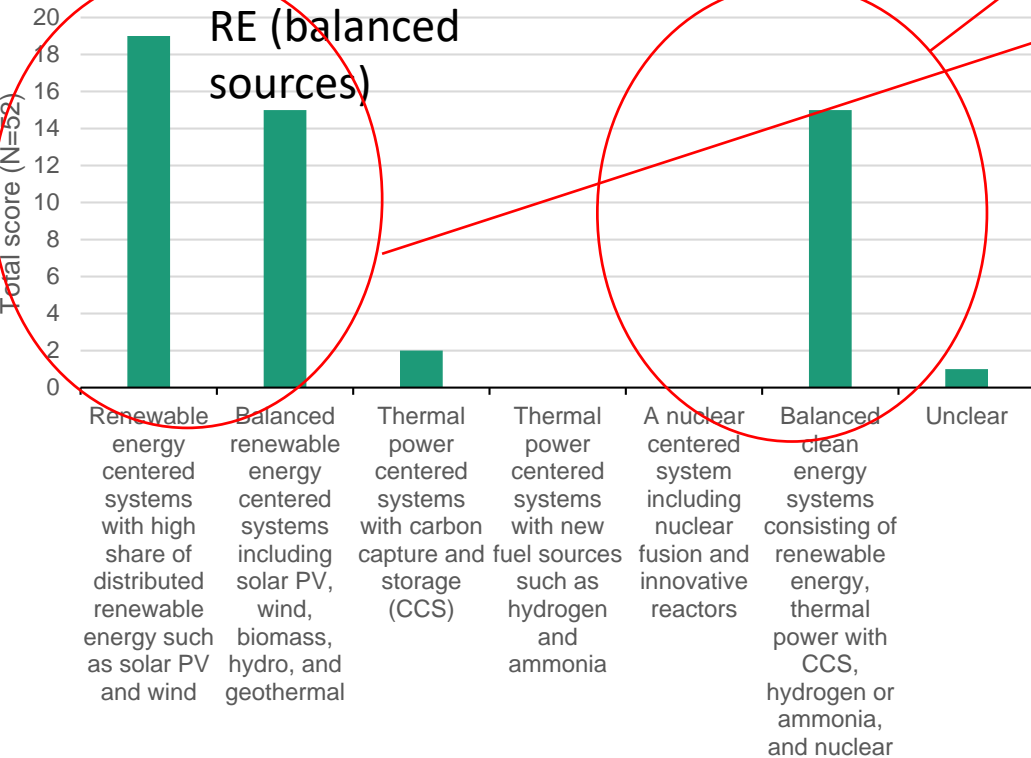
Climate goals for 2100: Net-zero clean energy system

1.2.1. What kinds of **net-zero clean energy systems** do you hope to achieve in your country in the long-term by around the year 2100?

1.2.2. Reasons of the selected net-zero clean energy systems

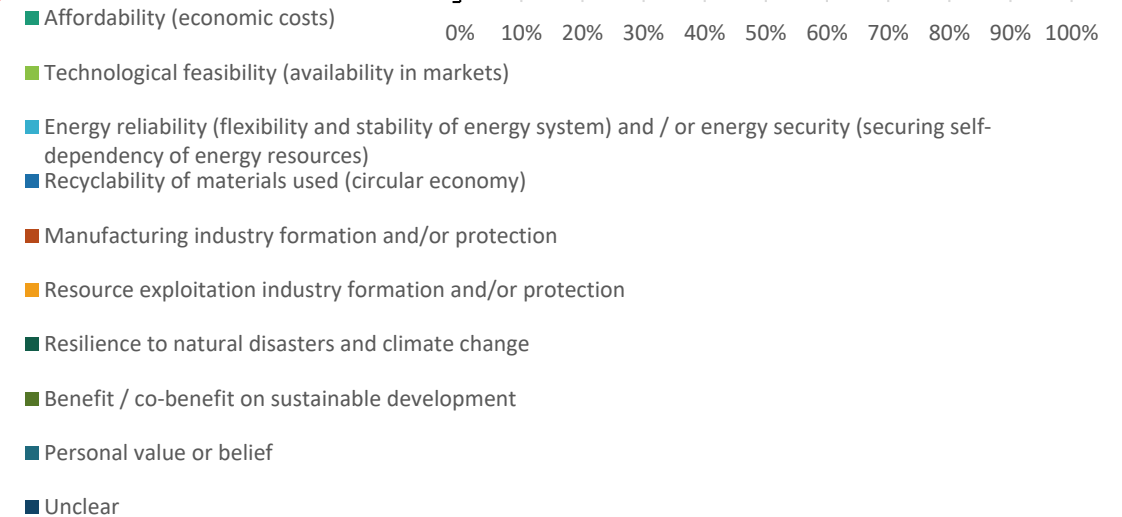
RE (Solar & wind)

All sources incl. RE CCS, nuclear, H₂



All energy sources (incl. CCS, Nuclear, Hydrogen) (N=15)

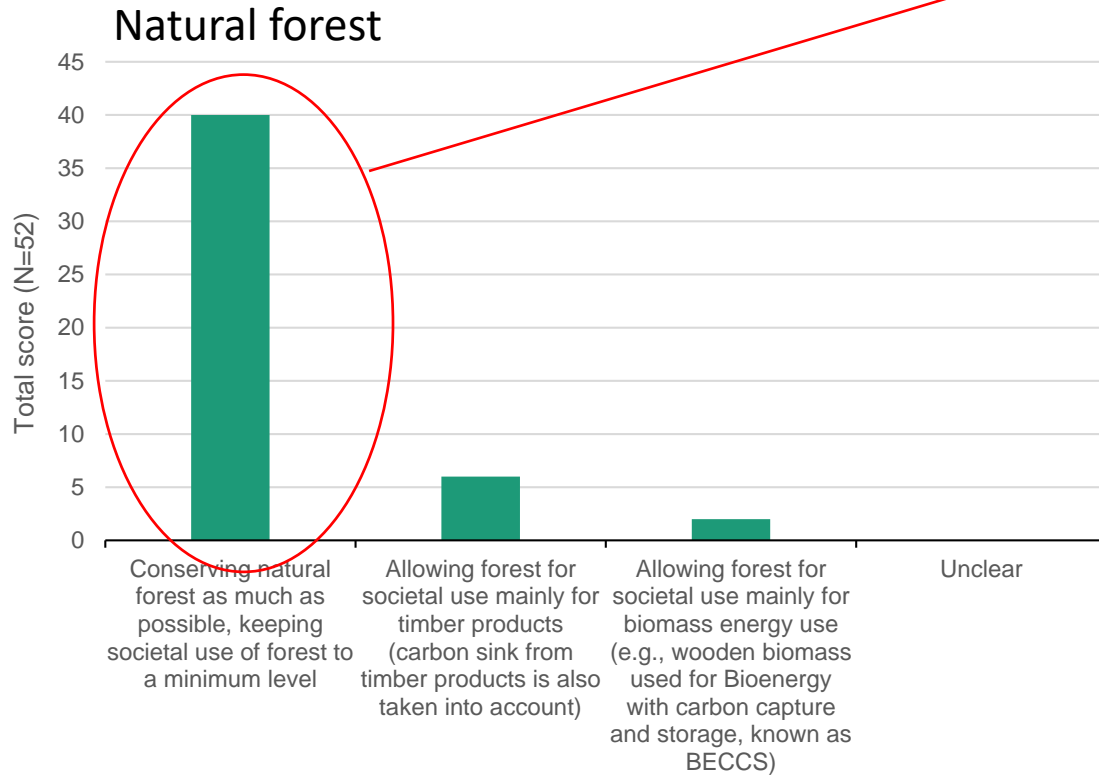
All RE sources (N=34)



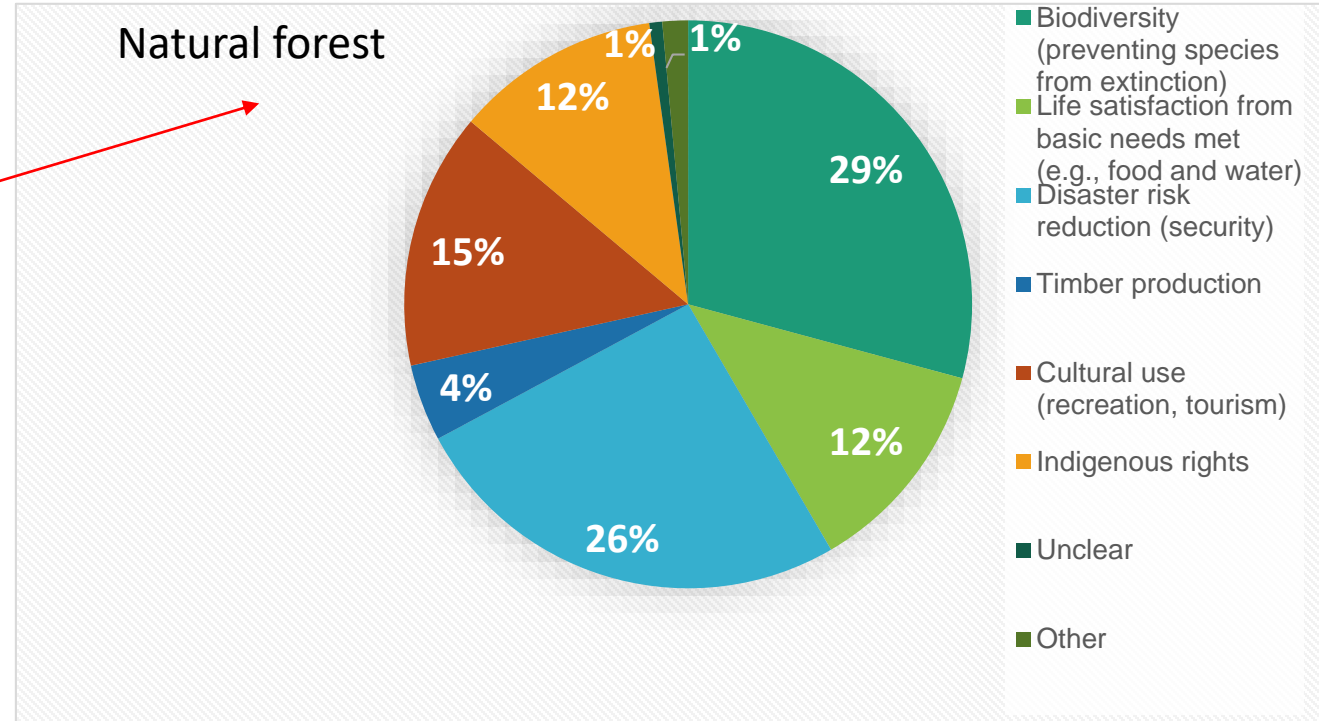
- Hope for net-zero energy sys. is divided into RE-centered vs. all sources.
- RE-centered net-zero energy system is hoped for due to its affordability, resource exploitation industry formation, benefit/co-benefit on sustainable development. Meanwhile, energy system using all sources is hoped for because of energy reliability, resilience to disasters, and value/belief

Climate goals for 2100: Net-zero/net-negative forest

1.2.4. What kinds of **forest** do you hope for in your country by around the year 2100?



1.2.5. **Reasons** of the selected net-zero/net-negative forest



- Natural forest is hoped for by most respondents due to its biodiversity, disaster risk reduction (security), cultural use (recreation, tourism), indigenous rights, and life satisfaction (e.g. food and water)
- These purposes as well as forest carbon sink function need to be recognised in developing roadmaps and policies

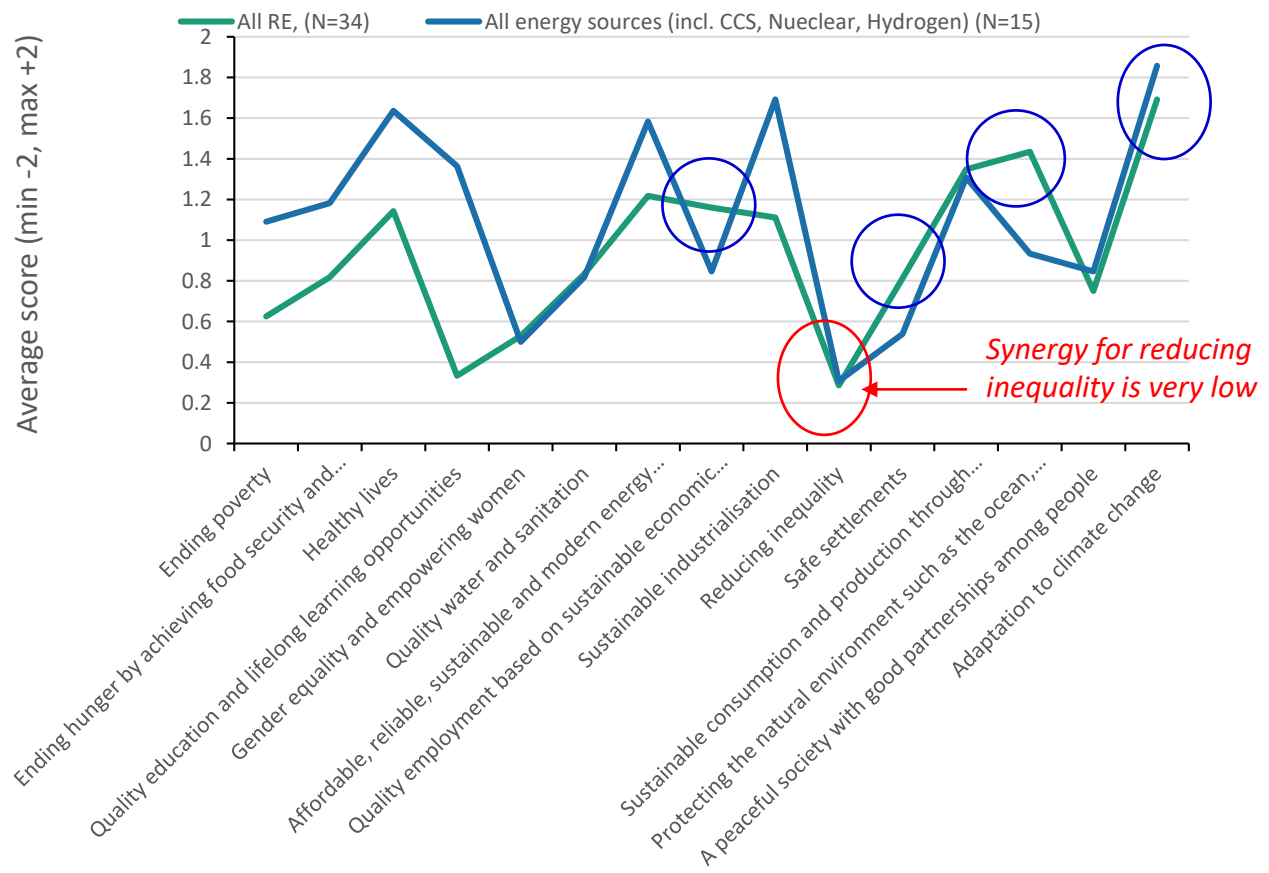
Synergy of net-zero energy and forest systems for development

- RE-centered systems' synergies are high for employment, safe settlement, and protecting environment. Both systems' synergy with climate change adaptation is high.
- Natural forest's synergies are lower than energy system for employment, industrialization but high for adaptation.
- Net-zero energy and forest systems need to be designed to complement with each other to achieve development vision

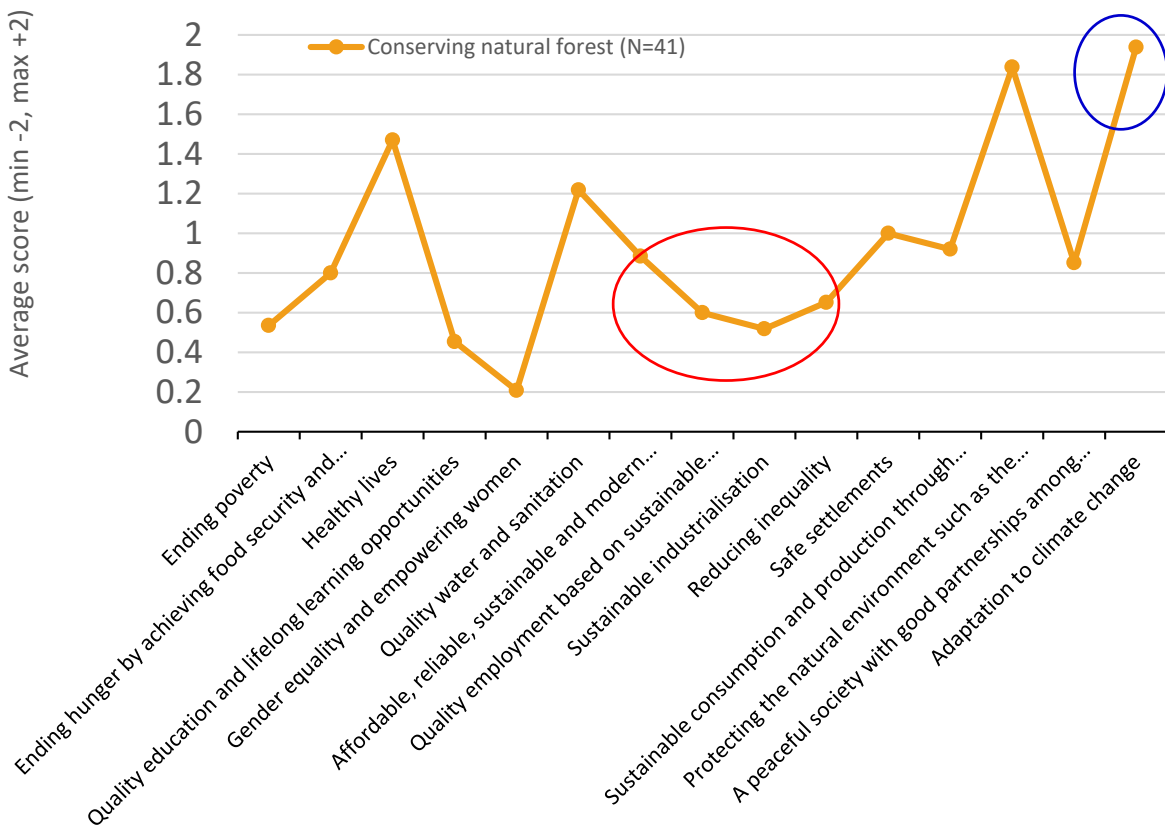
Trade-off

Synergy

Net-zero energy system: RE-centered vs. all sources



Net-zero/-negative forest system: natural forest



National development priorities vs. climate goals' synergy for development

- Overall, national development priorities and climate goals' synergies with development have a moderate positive correlation.
- Net-zero energy and forest systems need to be designed to strengthen the synergy especially for priority development components



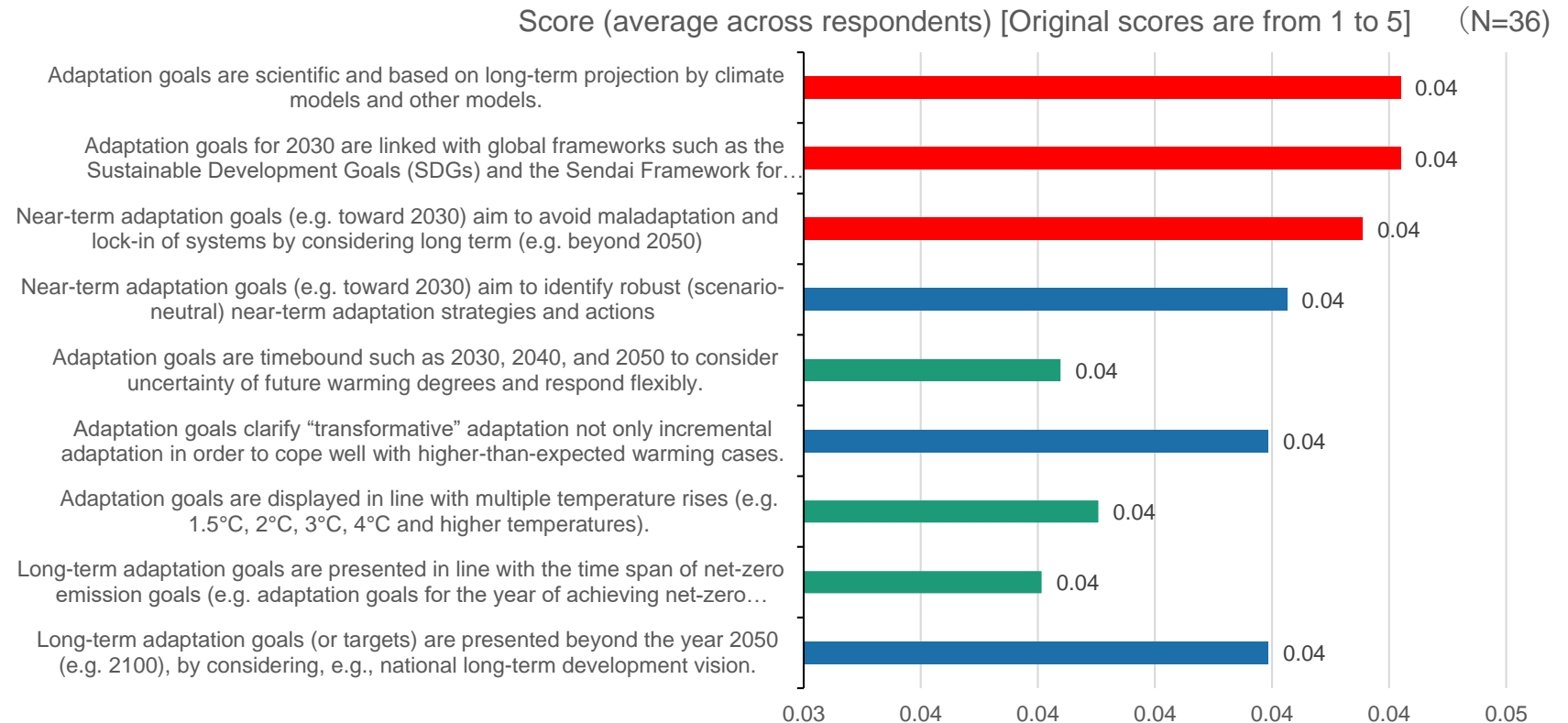
Climate goals:

National adaptation goals

Highly requested: 1. to be scientific based on long-term climate risk projections, 2. to be linked with SDGs and SFDRR for near-term (2030) targets, and 3. to specify goals to avoid maladaptation and lock-in of system by considering long-term.

Moderately requested: 4. to identify scenario-neutral strategies and actions in a short term (e.g. until 2030), 5. to include long-term targets beyond 2050 in line with national long-term development vision, 6. to clarify “transformative” adaptation to cope well with higher-than-expected warming cases

1.2.7. What do you hope for national adaptation goals.



Part II: Mitigation Pathway with Renewable Energy

Evaluation of the country's long-term target and current NDC

Fig.1: Ambition level of the long-term target (N=26).

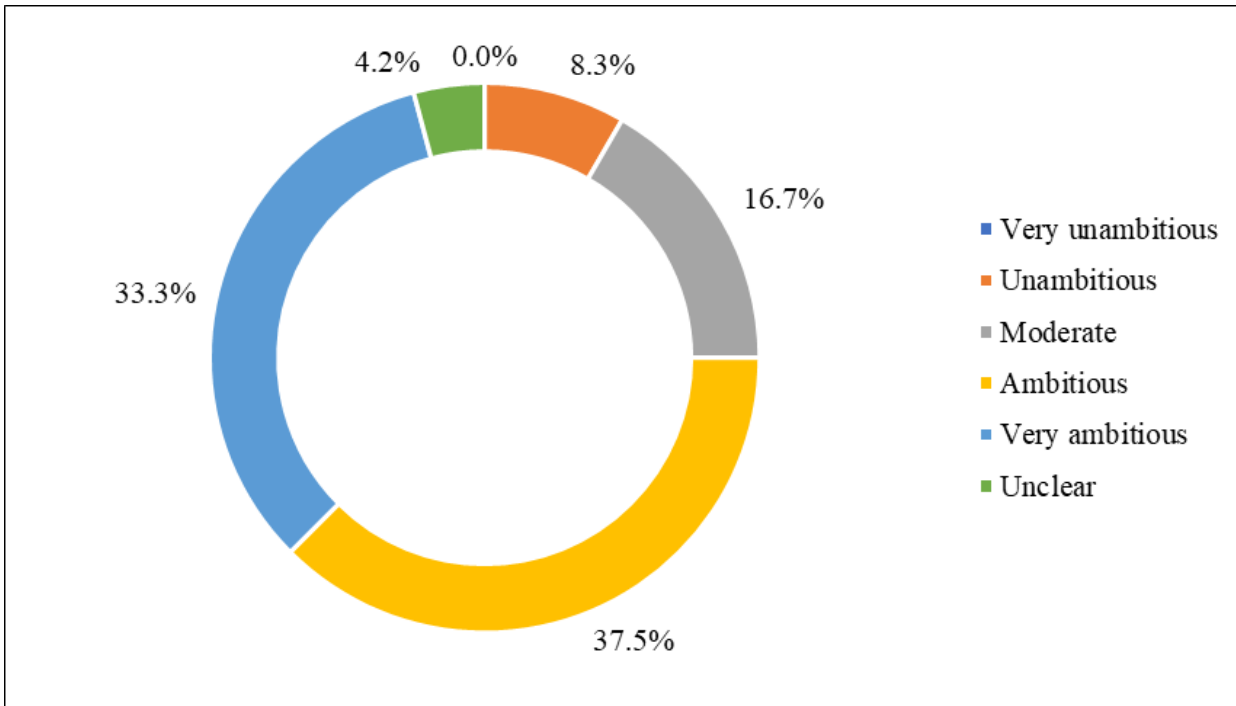
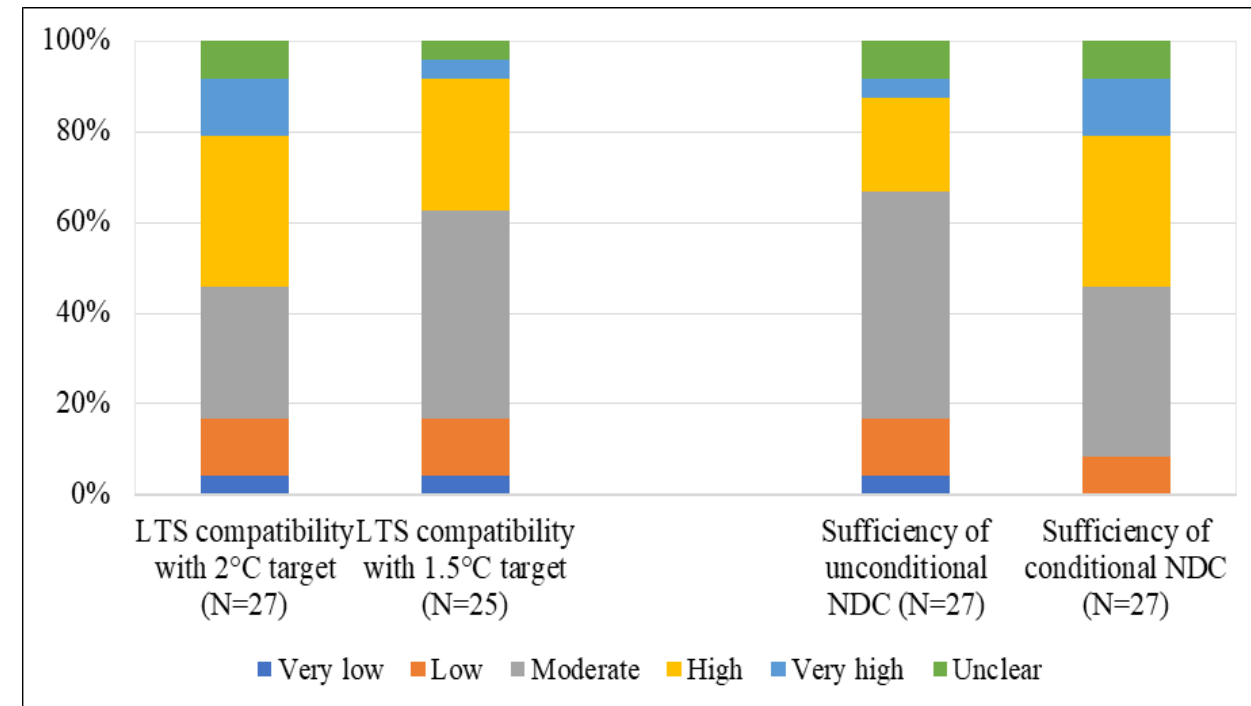


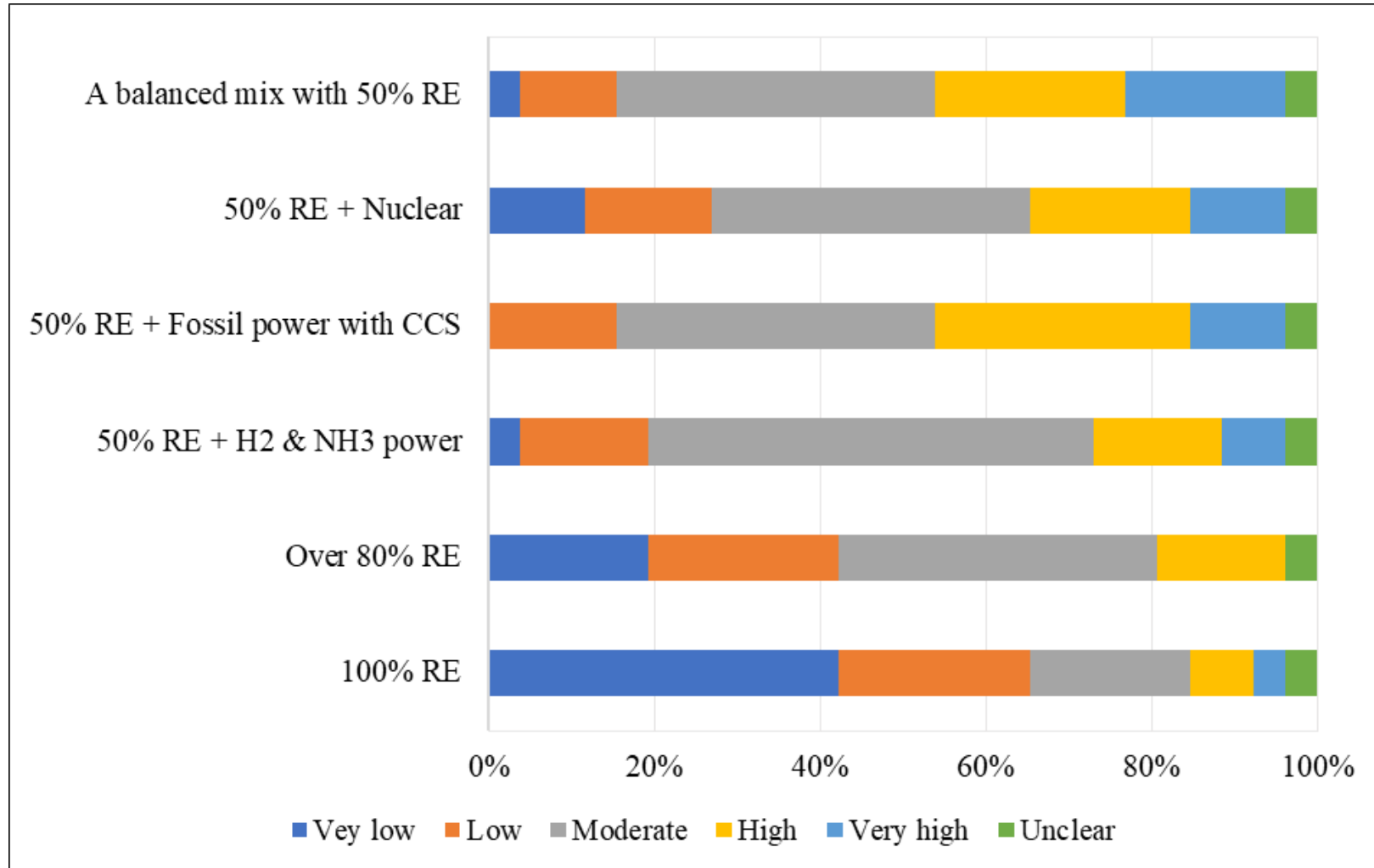
Fig.2: Compatibility of LTS and NDC with PA targets.



- Result of question No.2.1.1, 2.1.2 and 2.1.3 (proportion of the samples in the figures).
- More than 70% samples view Vietnam's long-term target to be ambitious or very ambitious. Whereas, the compatibility of LTS is evaluated to be moderate, especially with global 1.5°C target.
- The current NDC (especially unconditional) is thought less sufficient for achieving the country's long-term target.

Evaluation about the feasibility of future power system

Fig.3: Feasibility of power system decarbonization scenarios (N=27).

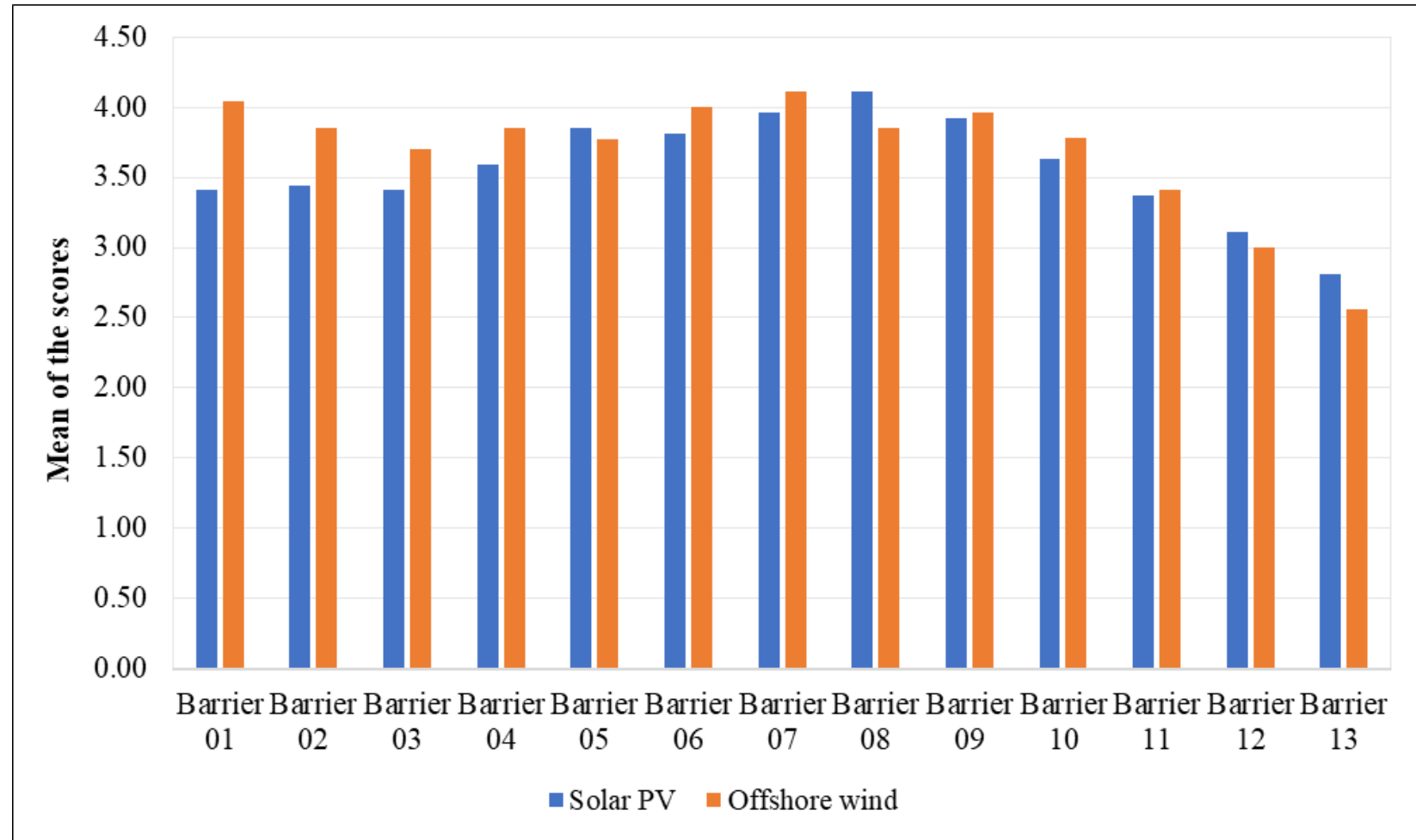


- Result of question No.2.1.5.
- Lower feasibility given to the options of 100% renewables and over 80% renewables.
- A balanced electricity mix with 50% renewables and the other carbon-free power sources is viewed to be more feasible for Vietnam.

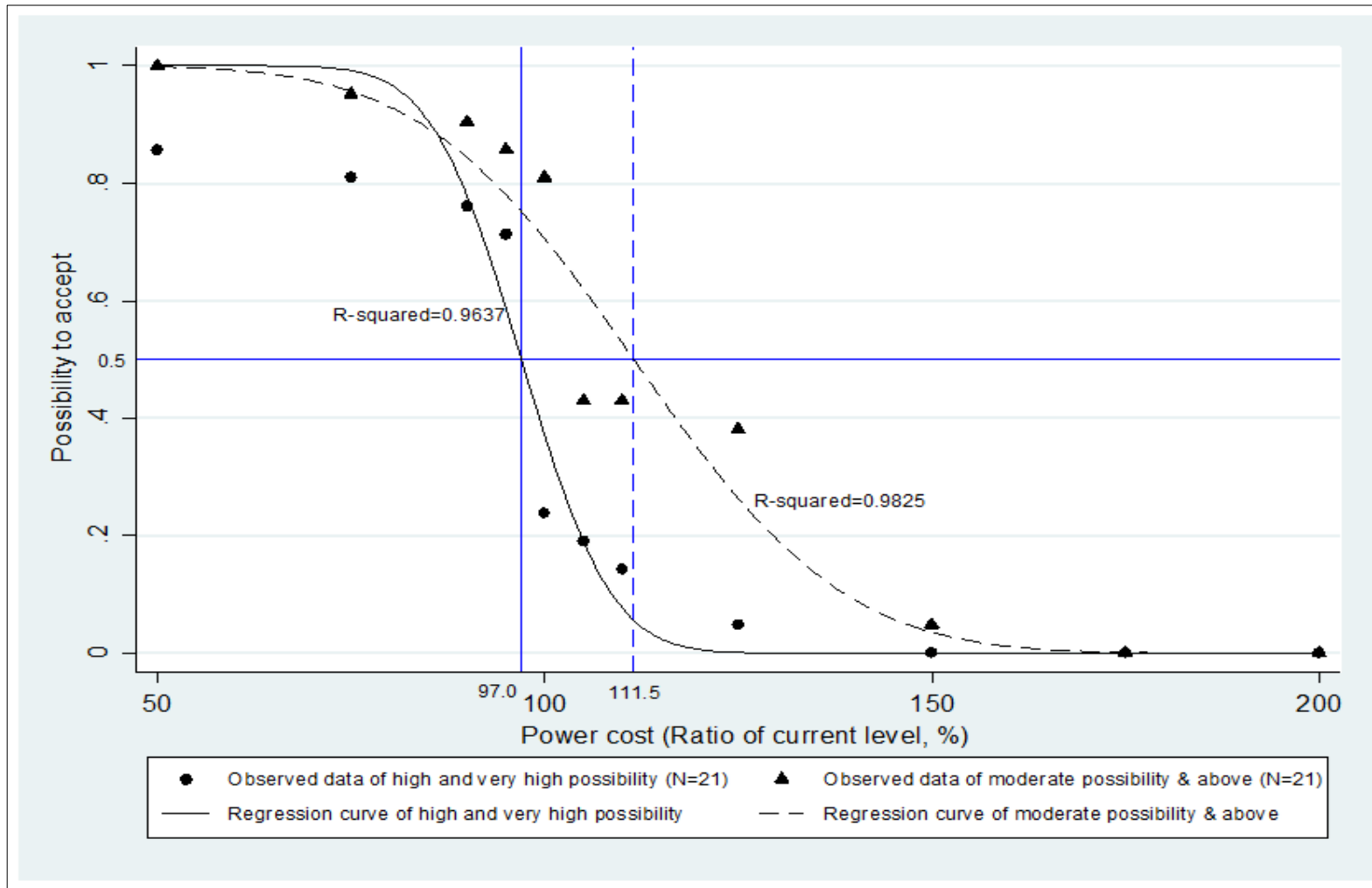
Barriers for the development solar PV and offshore wind

- Result of question No.2.3.2.
- Overall, evaluation of the samples on the barriers of solar PV and offshore wind is quite similar.
- The economic, policy and technical barriers are viewed high in general.
- Whereas, the societal barriers are viewed low or moderate.
- Comparatively, the economic barriers for offshore wind are relatively higher than those for solar PV.

Fig.7: Barriers for the development of solar PV and offshore wind.



Affordability of power price change due to energy transition



- Result of question No.2.3.2.
- On average, the samples could accept **almost no increase** of power prices from current levels with high and very high possibility.
- If including the samples with moderate possibility, the **acceptable power price would be 111.5%** of current level (an increase of around 10% of current level).
- This result confirms a **quite low affordability** in power price increase for energy transition.

Fig.12: Possibility for the samples to accept the changes of power prices.

Evaluation of the current system and preferred strategy

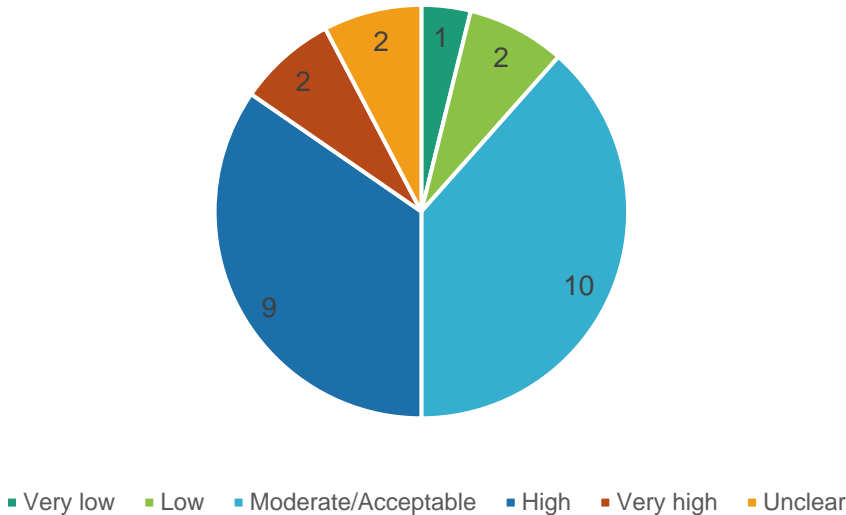
2.4.1. How do you evaluate the **current level of coal power generation** in power system of your country? (Current coal power share in the total power generation: Indonesia: 62%; Philippines: 57%; Thailand: 21%; Vietnam: 50%)

2.4.2. **Which strategy do you prefer** to reduce emissions of the current **coal power** plants in your country? (Early phase-out will lead to economic loss of the plants and possible job losses. Retrofitting by low carbon solutions requires extra investments and higher cost. Reducing the operation may reduce the economics and efficiency of the plants)

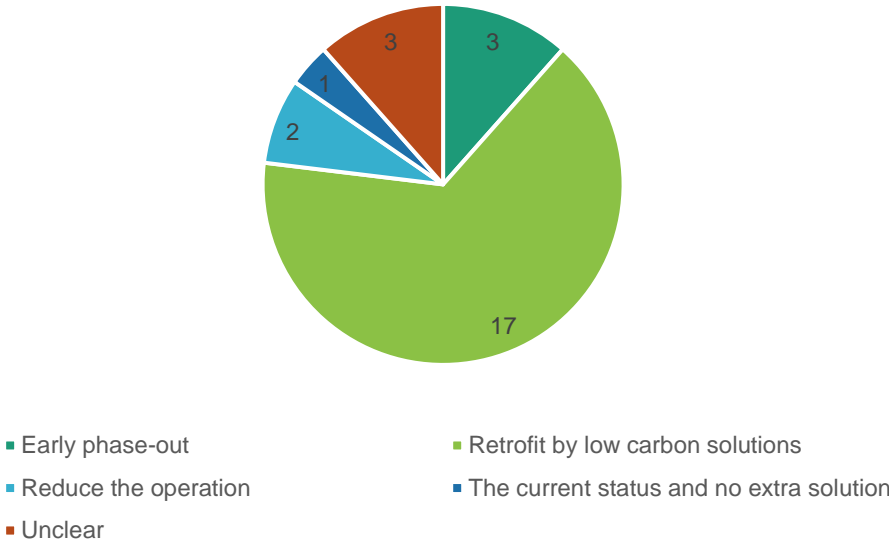
11/26 of the respondent thinks the level of coal in the power system is high or very high

Retrofit strategy are preferred(17/26) to mitigate emissions from existing coal power plants

Evaluation on current level of coal power generation (total sample:26)

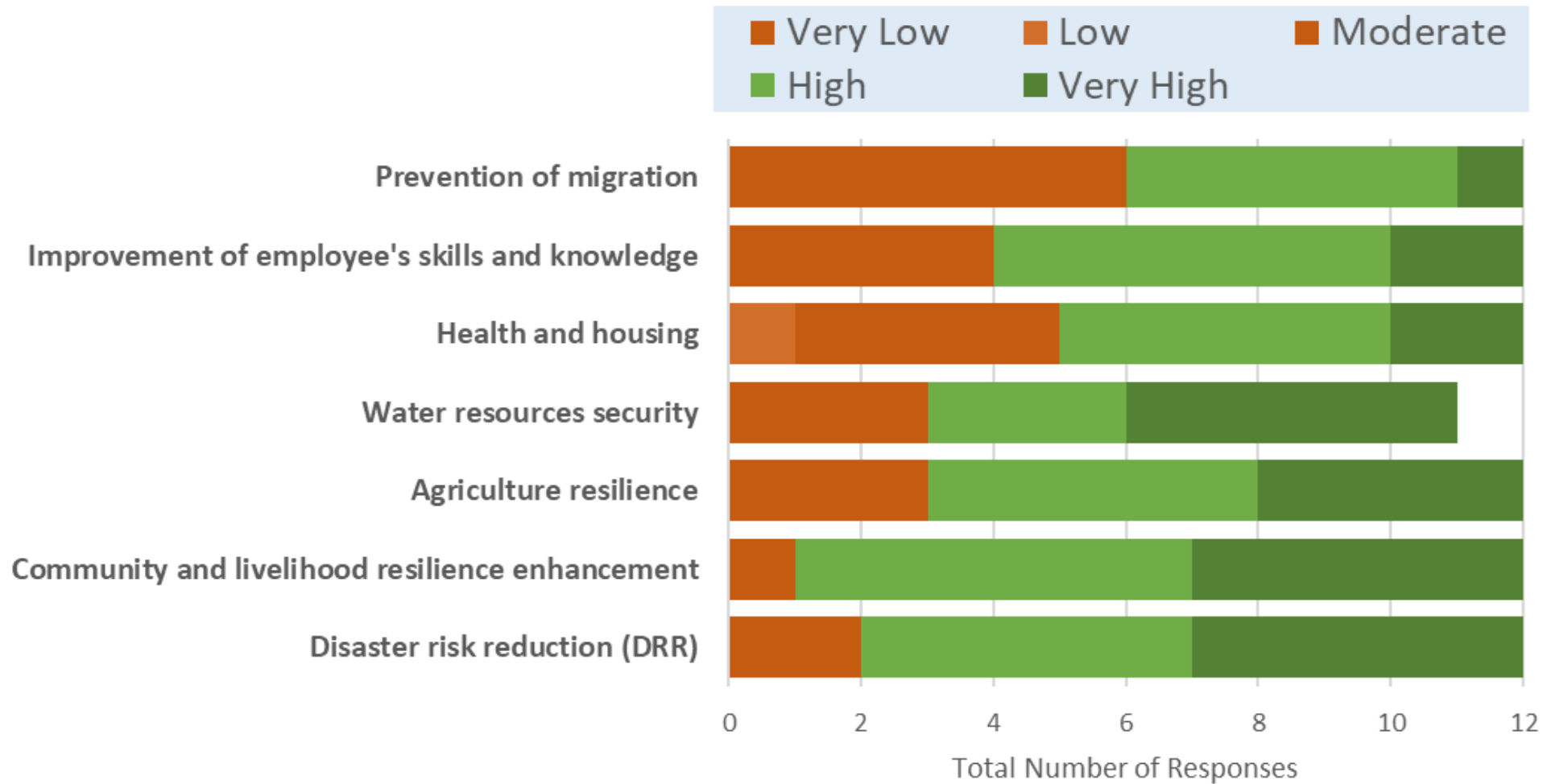


Preferred strategy to mitigate emission(total sample:26)



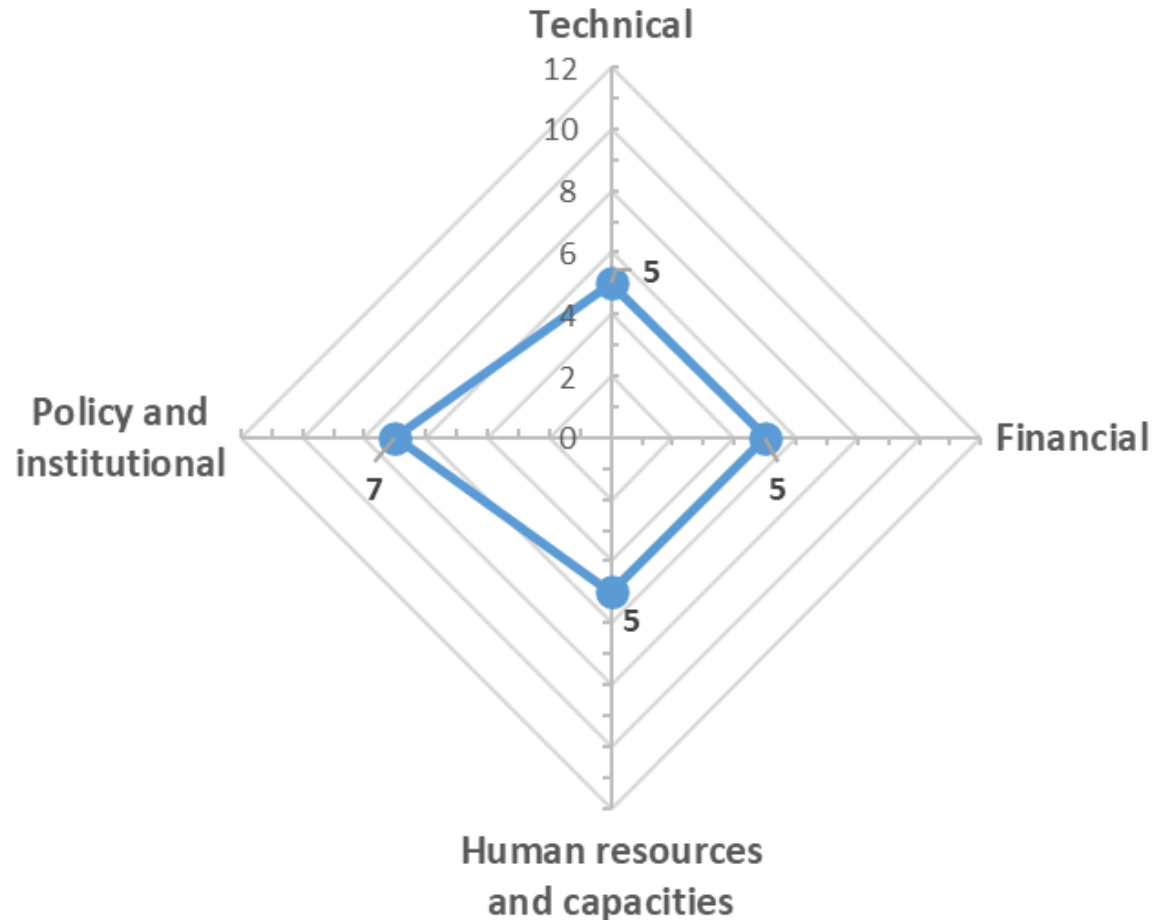
Part III. Synergising Adaptation with Net-zero Mitigation Pathway

Adaptation/Resilience Co-Benefits of solar PV system in Vietnam



Solar PV has 'high' to 'very high' co-benefits in multiple areas

Key barriers/challenges to make future renewable energy infrastructure resilient to climate risks? [n = 12]



Technical, Financial, Human resources and capacities, and Policy and institutional barriers were identified by the respondents

Policy and institutional barriers could be the first priority or pre-requisite before addressing other barriers

The National Consultation Workshop on the Integration Pathway for Mitigation and Adaptation

- **Date:** 30 July 2024
- **Location:** Hanoi, Viet Nam
- **Format:** Hybrid
- **Organizer:** IMHEN & IGES

- **Participants:** ~35 experts, scientists, and managers from key agencies and organizations.
- **Goal:** Discuss and propose solutions for integrating climate change mitigation and adaptation measure



The National Consultation Workshop on the Integration Pathway for Mitigation and Adaptation: Key messages

1. It is a need to consider synergies and integration Forest systems and net-zero into the national LTS
2. The transition to net-zero energy needs to balance technological upgrades for lower emissions and phasing out coal power.
3. Early energy transition to net-zero is necessary, but policy and institutional barriers exist.
4. Current funds only meet 30% of adaptation needs, and there is no dedicated adaptation fund, and it has to be integrated with existing programs and plans.
5. The framework is too general and needs to be more clearly defined.

6. Monitoring System:

An updated monitoring system for climate adaptation is crucial.

Ensure continuous tracking and evaluation of adaptation plan implementation.

Climate Change Department to regularly update the status of plans and systems for effectiveness.



Thank you !