

# POLICY BRIEF

## Shared Socioeconomic Pathways: Are We on The Path to the Future We Want?

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### Introduction

Shared socioeconomic pathways (SSPs) are based on five narratives describing broad socioeconomic trends that could shape future society. These are intended to span the range of plausible futures.

They include: a world of sustainability-focused growth and equality (SSP1); a “middle of the road” world where trends broadly follow their historical patterns (SSP2); a fragmented world of “resurgent nationalism” (SSP3); a world of ever-increasing inequality (SSP4); and a world of rapid and unconstrained growth in economic output and energy use (SSP5). All five SSPs can be loosely characterised in terms of socioeconomic challenges for mitigation and adaptation to climate change. They have also been used as tools to analyse solutions to regional and environmental problems. as shown in Fig. 1.

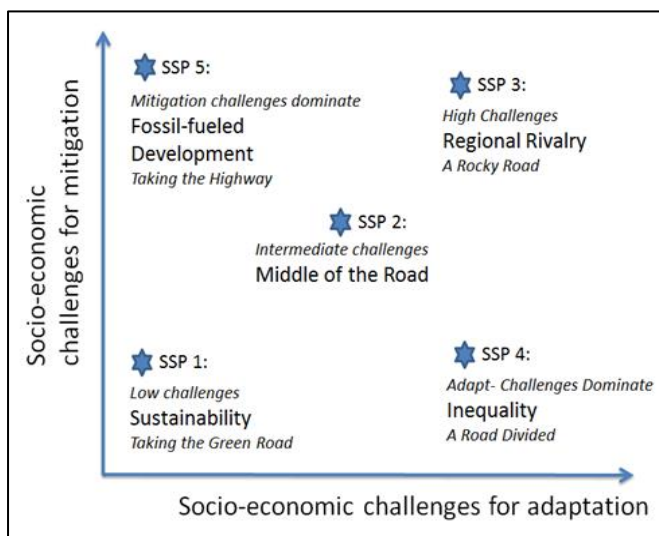


Fig. 1: Characterisation of SSPs in terms of mitigation and adaptation challenges

### At a Glance

- Shared socioeconomic pathways (SSPs) are based on five narratives that describe broad socioeconomic trends that could shape future society. SSPs of interest to the discussion are SSP1 (Sustainability), SSP3 (Regional Rivalry), and SSP5 (Fossil-fuelled Development).
- A study conducted in the Densu River Basin found that most stakeholders preferred a future resembling that of SSP1 despite the difficulties involved in getting to that state.
- The stakeholders, however, admitted that the current trend of development is more towards SSP3 and SSP5, which is not going to be beneficial to most in the long run.
- The stakeholders in the agricultural sector were increasingly alarmed by the rate at which the future looks to be more of an SSP3 world and are concerned about the future livelihoods.
- The stakeholders in the governance areas admitted that more must be done to forestall the negative impacts of the current trend.
- Overall, though SSP1 may be hard, all stakeholders agreed it is the best and national policies and implementation should aim in that direction.

## SSP Narratives

### SSP1: Sustainability

The world shifts gradually, toward a more sustainable path, emphasizing more inclusive development that respects environmental boundaries. In this SSP, the management of the global resources slowly improves, with increased investment in education and health, and the emphasis on economic growth shifts more towards human well-being. Generally, SSP1 is driven by an increasing commitment to achieving development goals, inequality is reduced both across and within countries. Consumption is oriented toward low material growth and lower resource and energy intensity.

### SSP2: Middle of the Road

This is characterised by the world following a path in which social, economic, and technological trends do not change significantly from historical patterns. Development and income growth is uneven, with some countries making relatively good progress while others fail to meet expectations. Global and national institutions work toward achieving the sustainable development goals but make slow progress. Environmental systems experience degradation, although there are some improvements and overall, the intensity of resource and energy use declines. Global population growth is moderate and levels off in the second half of the century. Income inequality persists or improves only slowly and challenges to reducing vulnerability to societal and environmental changes remain.

### SSP3: Regional Rivalry

In SSP3, a rise in nationalism, concerns about competitiveness and security, and regional conflicts make countries focus more on domestic or, at most, regional issues. Policies shift over time to become increasingly oriented toward national and regional security issues. Countries focus on achieving energy and food security goals within their own regions at the expense of broader-based development. Investments in education and technological development decline. Economic development

is slow with intensive material consumption, and inequalities persist or worsen over time. Population growth is low in industrialized and high in developing countries. A low international priority for addressing environmental concerns leads to strong environmental degradation in some regions.

### SSP4: Inequality

Highly unequal investments in human capital, combined with increasing disparities in economic opportunity and political power lead to increasing inequalities both across and within countries in this SSP. Over time, the gap widens between an internationally connected society, contributing to knowledge- and capital-intensive sectors of the global economy, and a fragmented collection of lower-income, poorly educated societies that work in a labour intensive, low-tech economy. Social cohesion is reduced leading to a rise in conflict and unrest. Technology development is high in the high-tech economy and sectors. The globally connected energy sector diversifies, with investments in both carbon-intensive fuels like coal and unconventional oil. Environmental policies focus on local issues around middle- and high-income areas.

### SSP5: Fossil-fuelled Development

This world places increasing faith in competitive markets, innovation, and participatory societies to produce rapid technological progress and development of human capital as the path to sustainable development. Global markets are increasingly integrated, with strong investments in health, education, and institutions to enhance human and social capital. At the same time, the push for economic and social development is coupled with the exploitation of abundant fossil fuel resources and the adoption of resource and energy intensive lifestyles around the world. All these factors lead to rapid growth of the global economy, while global population peaks and declines in the 21st century. Local environmental problems like air pollution are successfully managed. There is faith in the ability to effectively manage social and ecological systems, including by geo-engineering if necessary.

# Developing The Local Narratives

## Pre-Development

Led by experts from the CSIR-Water Research Institute (CSIR-WRI), and its associates on the Building Climate Resilience into Basin Water Management (CREAM) Project, visioning exercises were done to characterize the proximal and distant futures at the national- and basin-level for SSPs. As these SSPs were developed largely based on literature and relevant previous knowledge, it was important to meet with the stakeholders whose activities are linked with these SSPs to discuss, validate, and update the SSPs as appropriate. A two-day workshop was therefore organized in the Densu River Basin, one of the areas under study in the project, to meet with the stakeholders and refine the SSPs that had been developed.

## Stakeholders

Stakeholders were drawn from the agriculture, tourism, forestry, water, and governance sectors. As the focus of the study was on the Densu River Basin, all the participants were selected from towns that fall within the area. The stakeholders in the governance sector were the representatives of the Planning Units of the Districts, Municipal and Metropolitan areas

that are partially, or totally located within the Densu River Basin.

## Engagement

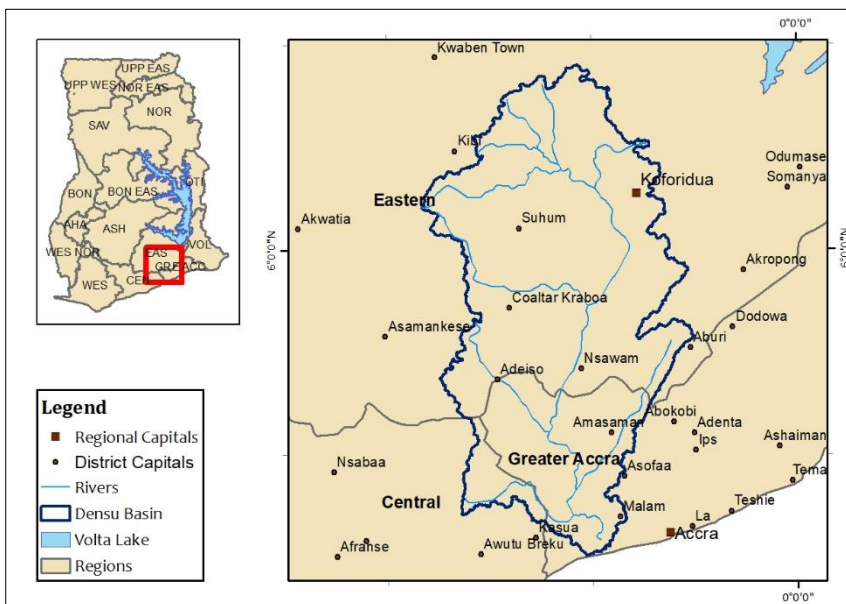
The stakeholders were invited to a two-day workshop at which their views on the developed local narratives were elicited. The first day had Emmanuel Obuobie, the Project's PI, lead with an introduction to what SSPs are. This was then followed with an in-depth description of the stories of three SSPs (SSPs 1, 3 and 5) chosen for discussion.



**Fig. 3: Section of stakeholders discussing effects of SSPs on their sector**

The participants were then invited to engage in a visioning exercise in which they imagined themselves to be in the year 2050 but with the same age, occupation, and family as the present day. In this visioning exercise, the participants were invited to place themselves in a selected SSP and describe how a normal week would look like for themselves and their family with respect to their lifestyle, food, transport, housing, free time, schools, work conditions and technology.

The stakeholders were finally taken through an in-depth explanation of the storylines of SSPs 1, 3 and 5 with respect to the economy and lifestyle, policies and institutions, and environment and natural resources. After the storyline of each SSP, the participants were asked about their perception of a world living under that SSP,



**Fig. 2: Map of Ghana showing the Densu River Basin**

what it would take to get to that level, as well as what they approved and disapproved of a world living under that SSP.

## Key findings

For SSP1 (Sustainability), the remarks from the participants were generally positive, with many commenting that it was a very ideal future. There were, however, a few persons who were not sold on the idea of SSP1. Chiefly, they were sceptical about how realistic it is, given the normal human tendencies. Stakeholders were unanimous in stating it would take a lot of effort to reach such a state. On disapproval, the few opposed to the SSP stated that it would take too much input to maintain such a future, rendering it unsustainable in the long term.

SSSP3 (Regional Rivalry) had generally mixed responses. Some liked the idea of promotion of the local production while the others were not particularly impressed by the chaotic nature of a future under such an SSP. The consensus, however, was uniform on the fact that this SSP does not take care of the environment and so would eventually collapse. The stakeholders present admitted that there are elements of the SSP3 that can be seen in present-day life, like many mining sites around the country and the general lack of enforcement of laws and policies. There also was a unanimous agreement that elements of this SSP are already present in many cases.

The last SSP considered, SSP5 (Fossil-fueled development), received muted acceptance. While some of the stakeholders liked the ambitiousness present in such a future, others disapproved of the recklessness it came along with. The stakeholders related a lot of the happenings in China and Russia to this SSP, recounting that these are countries that do not care about what happens as long as they get what they want. When asked if this is happening in the present day, the response was that it is happening.

## Conclusions

The stakeholders in the non-governance sectors, especially those in the agricultural sector expressed a lot of concern about the trajectory of national policies and the lack of implementation of those in line with SSP1.

The governance-area stakeholders were in agreement that the implementation of the policies were lacking and needed to be improved.

## Recommendation

Existing policies geared towards sustainability should be properly enforced by the various agencies to ensure a sustainable future for the Densu River Basin and the nation as a whole.

## Further Reading

Simpson, N. P., Mach, K. J., Constable, A., Hess, J., Hogarth, R., Howden, M., Lawrence, J., Lempert, R. J., Muccione, V., Mackey, B., New, M. G., O'Neill, B., Otto, F., Pörtner, H.-O., Reisinger, A., Roberts, D., Schmidt, D. N., Seneviratne, S., Strongin, S., ... Trisos, C. H. (2021). A framework for complex climate change risk assessment. *One Earth*, 4(4), 489–501. <https://doi.org/10.1016/j.oneear.2021.03.005>

## Acknowledgements

The authors would like to acknowledge the contributions of participants from the various farmer groups, Ghana Tourism Authority, Forestry Commission, and the MMDAs present at the workshop.

