



**End Poverty
in All its
Forms
Everywhere**

SKAM 2022

1 NO
POVERTY



End Poverty in All its Forms Everywhere

SKAM 2022

Why should one care?

WORLD DATA LAB'S MISSION

Making Everyone Count

7,901,182,953

CURRENT WORLD
POPULATION

[population.io](#)

3,666,010,421

CURRENT MIDDLE
CLASS POPULATION

[MarketPro](#)

685,802,339

PEOPLE LIVING IN
EXTREME POVERTY

[Poverty Clock](#)

Poverty is multidimensional:

- No money
- No food, nutrition
- No education
- No healthcare
- No clean water

<https://www.isglobal.org/en/-/sdg-1-end-poverty-in-all-its-forms-everywhere>

<https://worlddata.io/>

Questions we aim to answer

- Are we on track to achieve the goal of reducing poverty by 2030?
- What are the low-hanging fruits that we should aim for?
- Which factors/regions should one focus on?

Background

A lot of work has been done in this field in the recent past:

- A detailed study on the [causes of poverty \(article\)](#)
- The Effects of Poverty on Childhood Development - [work1](#), [work2](#)
- [Ending Global Poverty](#): A Guide to What Works - Stephen C. Smith
- [Halving global poverty](#)
- [Understanding global poverty from satellite imagery](#)

Data

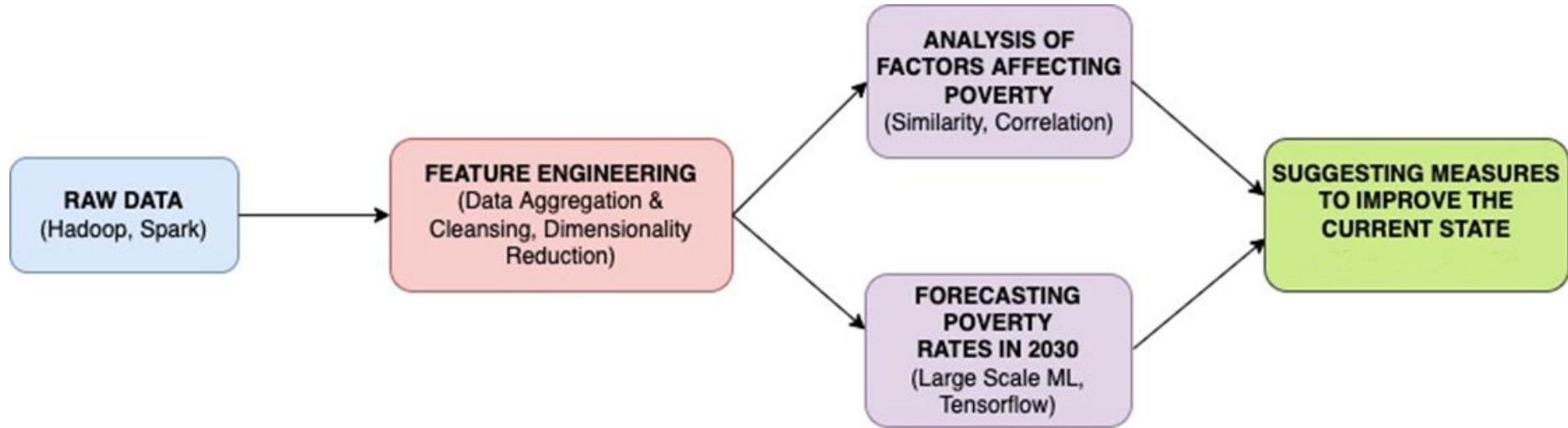
- Satellite images of night-time light from the VIIRS database of Google Earth Engine. (~40 GB)

Region	USA	South America	South Asia	Middle East	Africa	Australia	Europe
Data in GB	7	4	7	3.6	10	2.4	5

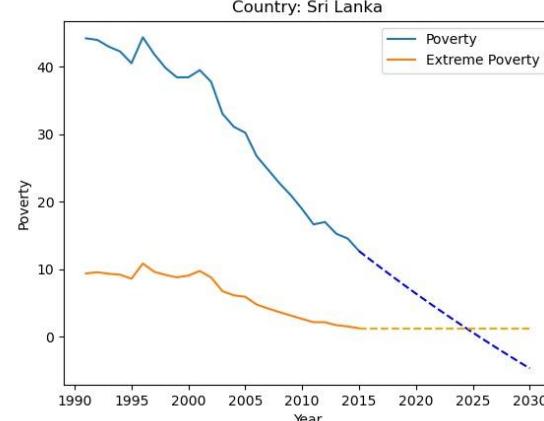
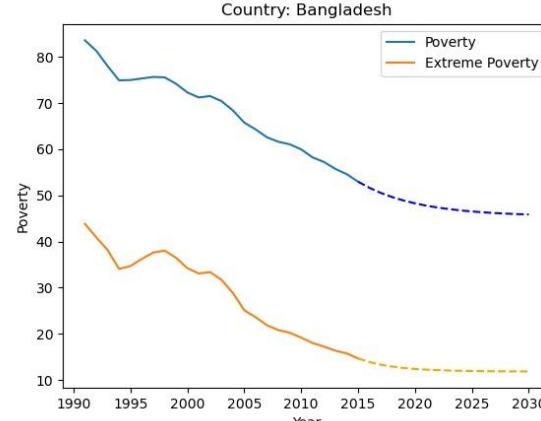
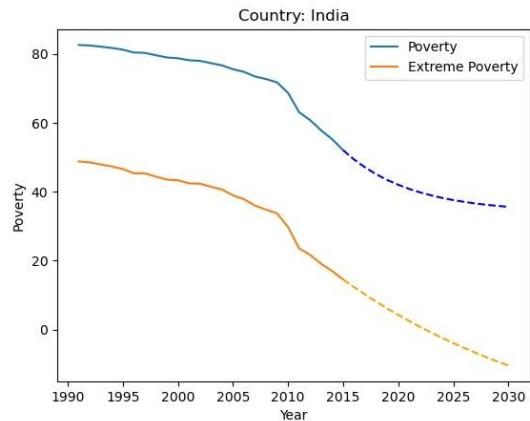
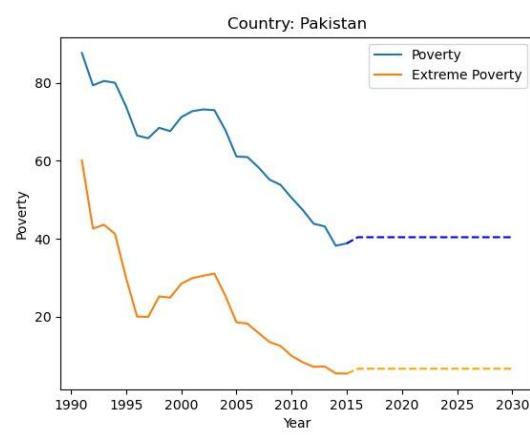
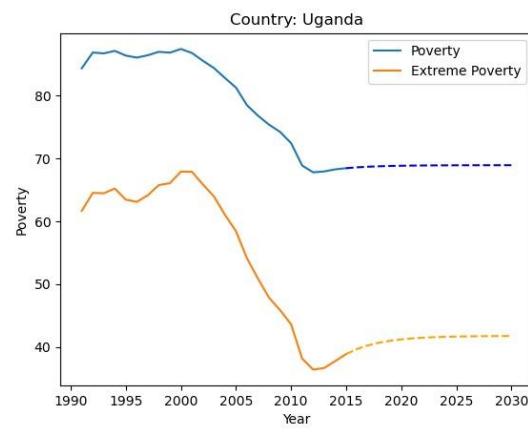
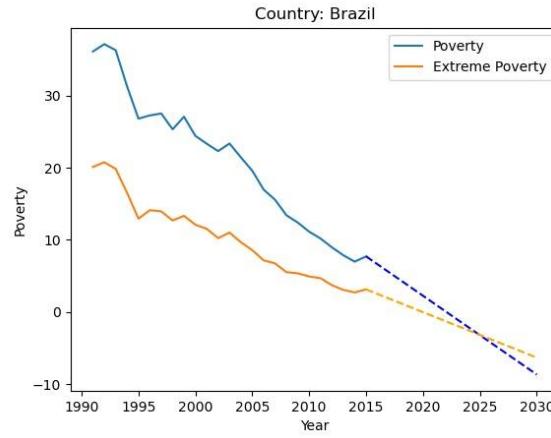
Table 1. Image data size for each region

- Tabular data for poverty-related factors from 'Data World Bank' and 'World Bank Organisation'

Data Pipeline and Concepts

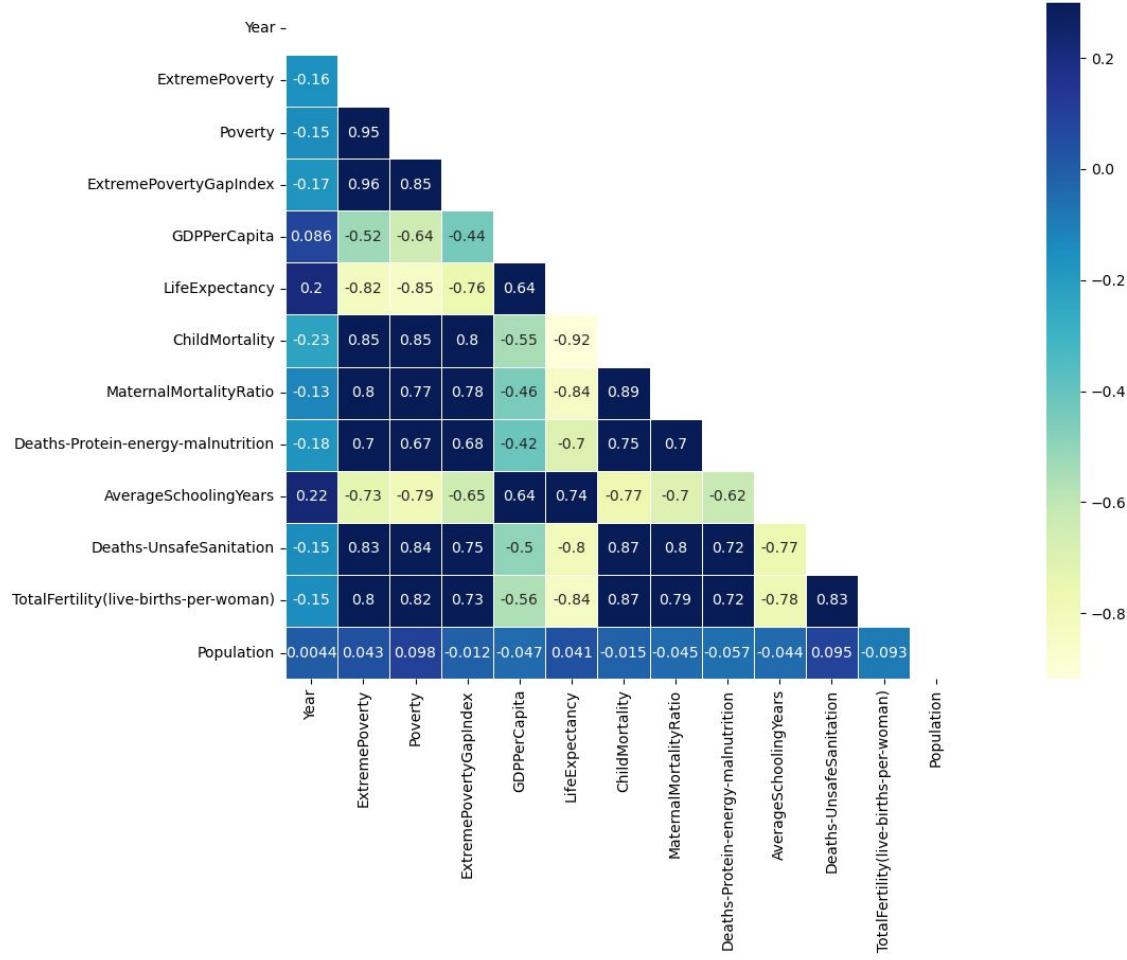


Results

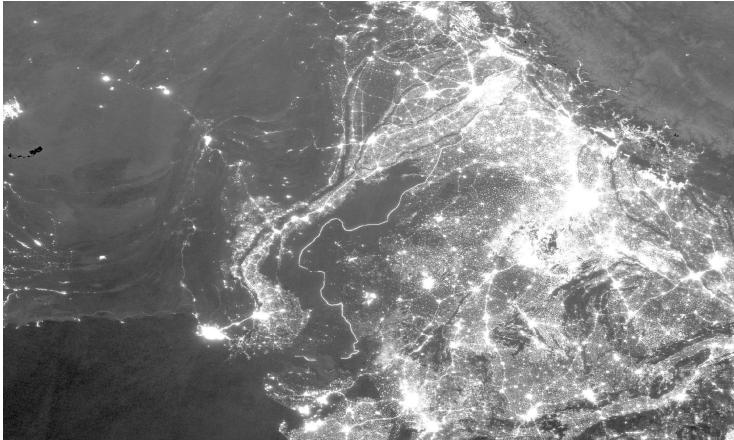


Country	Poverty	Extreme Poverty
India	9.676278036	-11.11438878
Pakistan	20.20055108	4.368806811
Nepal	18.8660096	-0.502481901
Bangladesh	34.02532651	6.120810567
Bhutan	7.115132654	0.681173016
Thailand	-0.186116828	0.274350131
Myanmar	3.128511585	-0.435953552
Indonesia	-1.035402043	2.87823
Uganda	64.99622294	34.017347
Egypt	32.03615146	4.543123546
Namibia	36.09043243	15.69554875
Gambia	32.53446	7.977756
Zimbabwe	65.81351315	40.5525716
Niger	73.01192	39.29049
Nigeria	70.80816664	38.41422675
Angola	73.0806784	51.82883349

Table 1 – Predictions for 2030



Results

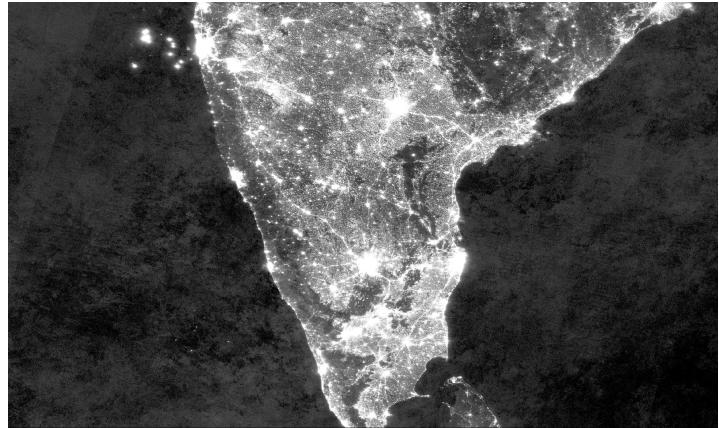


NW Indian
Subcontinent
2015 and
2030

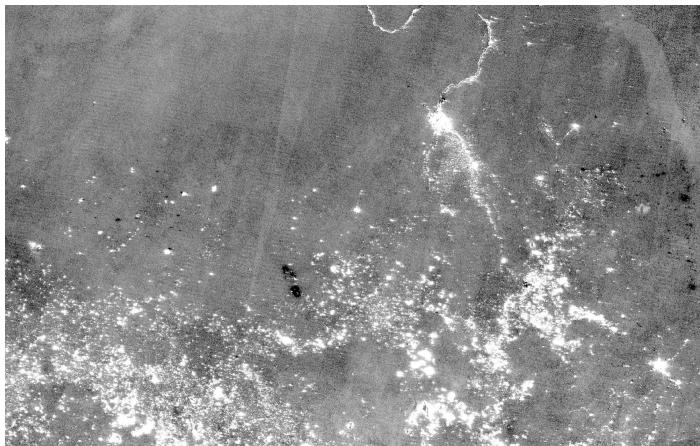


Central and
Eastern Indian
Subcontinent
2015 and 2030

Results continued....



South Indian
Subcontinent
2015 and 2030



Central African
Subcontinent
2015 and 2030

Takeaways

- From poverty predictions - we can get an idea if a given country is on track to reach the goal.
- From correlation study - we can identify factors that must be considered.
- From night-light satellite image predictions - the areas/regions to be focused on can be identified.

Challenges/Future Scope

- Satellite images had seasonal cloud cover.
- Computational power shortcomings.
- Our model can be run on multiple regions, we could run it only on a few South Asian regions.
- Better models like CNNs can be used for predictions.

References

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- <https://data.worldbank.org/topic/poverty>

Thank you