

Effect of Literacy on Poverty Rates in India

Ryan Richardson¹, Mary Soike², Amanda Timko³

1. Earth and Environmental Science, 2. Sustainability Science, 3. Political Science , Furman University, Greenville, SC 29613

Abstract

The objective of this project was to investigate if education levels impacted the poverty rates in a region. To achieve this objective we used GIS to map the change of poverty rates over a 20 year period versus the state of literacy in 1981. If literacy rates did affect poverty rates, it would be expected that states with high literacy rates in 1981 would see a significant decrease in poverty rates over a 20 year period. The percent change of poverty rates from 1983 to 2000 were mapped using graduated colors while the literacy rates in 1981 and 2000 were displayed using two bars overlaid on the map of percent change in poverty. This map supported the conclusion that high literacy rates correspond with declines in poverty rate over time. The exceptions to this finding include the states whose literacy rates were already high and as a result, they did not see a significant decrease in poverty rates, a trend can be seen by looking at the bar graphs of literacy and poverty rates over 10 year periods. The conclusion was that higher literacy rates positively influence poverty rates and governments should consider this when forming policies intended to decrease poverty.

Background

High levels of poverty and low education levels have been problems that have plagued India for many years. While these may seem like two completely separate problems that India should address individually, many feel they are actually interrelated. If people, both men and women, are not given the opportunity to an education, then their ability to find a well paying, stable job is reduced. If they are not able to find such a job, then they will likely remain in poverty, forever struggling to meet the needs of themselves and their families. Due to this, the relationship between poverty and education is mutually reinforcing (Tilak 2005). Without education, people are not given the tools they need to break free of the poverty cycle and poverty will continue as a result. Economic growth is a product of education and in order for a country to sustain its development, its people need to be educated (Tilak 2005). Education is at the heart of development and if a country is serious about reducing poverty, one of the areas they should invest in is the education of the people (Matsuura). Ending poverty is a difficult task many countries are faced with and educating the people has been shown to be one of the many factors that will lead to the diminishing of the impoverished class.

Data Collection Methods

The data used for this project was derived from various government and survey publications that were available online. This included census data and various nationwide studies and surveys. The particular data that was analyzed were the poverty rates and literacy rates. The data compiled spanned over a 20 year time period which allowed observation of the changes in poverty rates over time and their correlation with increased literacy rates.

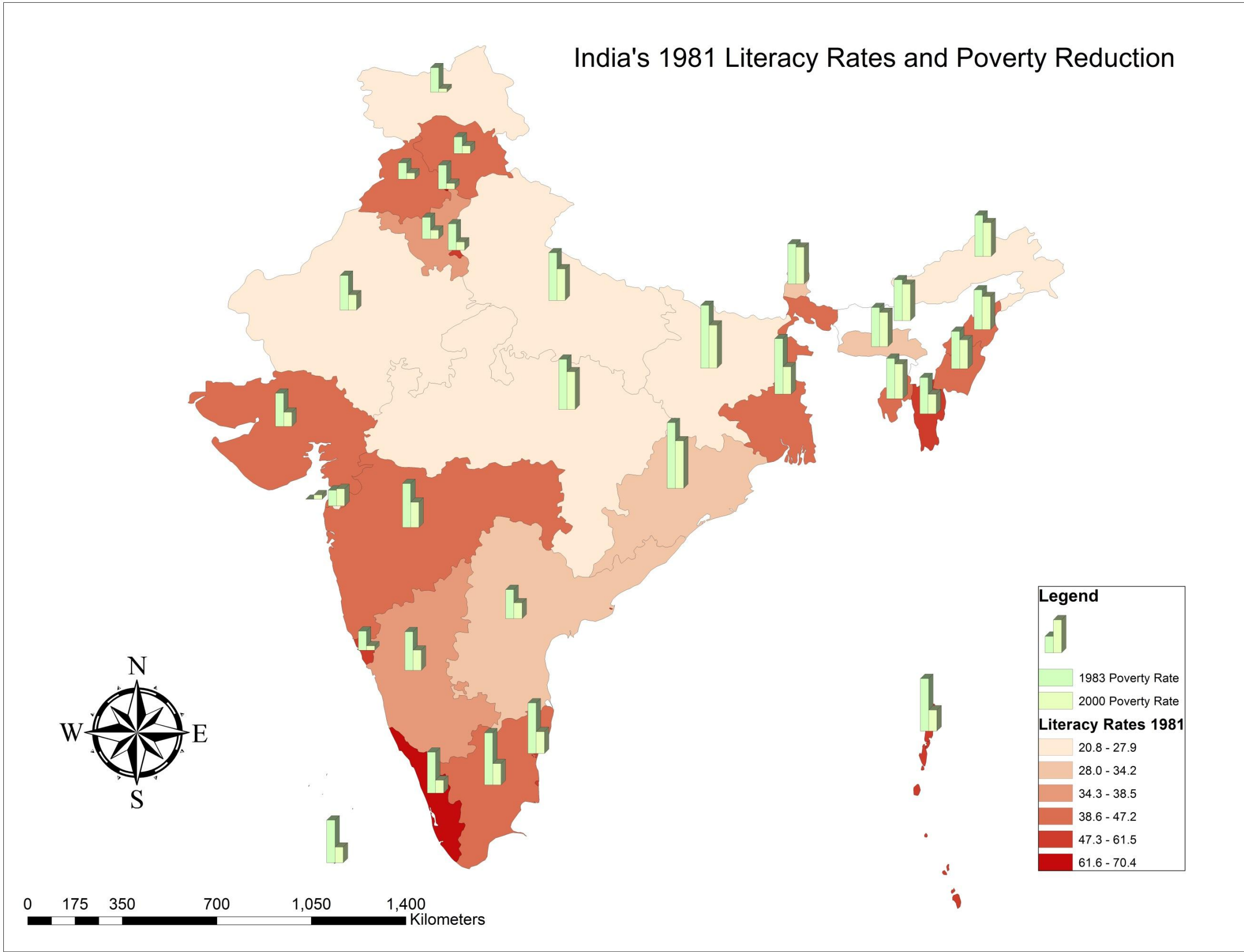


Figure 1. This figure compares literacy rates in 1981 to the change in poverty rates from 1983 to 2000. Areas that are darker red had higher literacy rates in 1981 and lighter areas had lower literacy rates. The bar graphs show the poverty rates for 1983 and 2000. The areas with higher literacy rates in 1981 had more significant decreases in poverty rates from 1983 to 2000, which supports our original hypothesis.

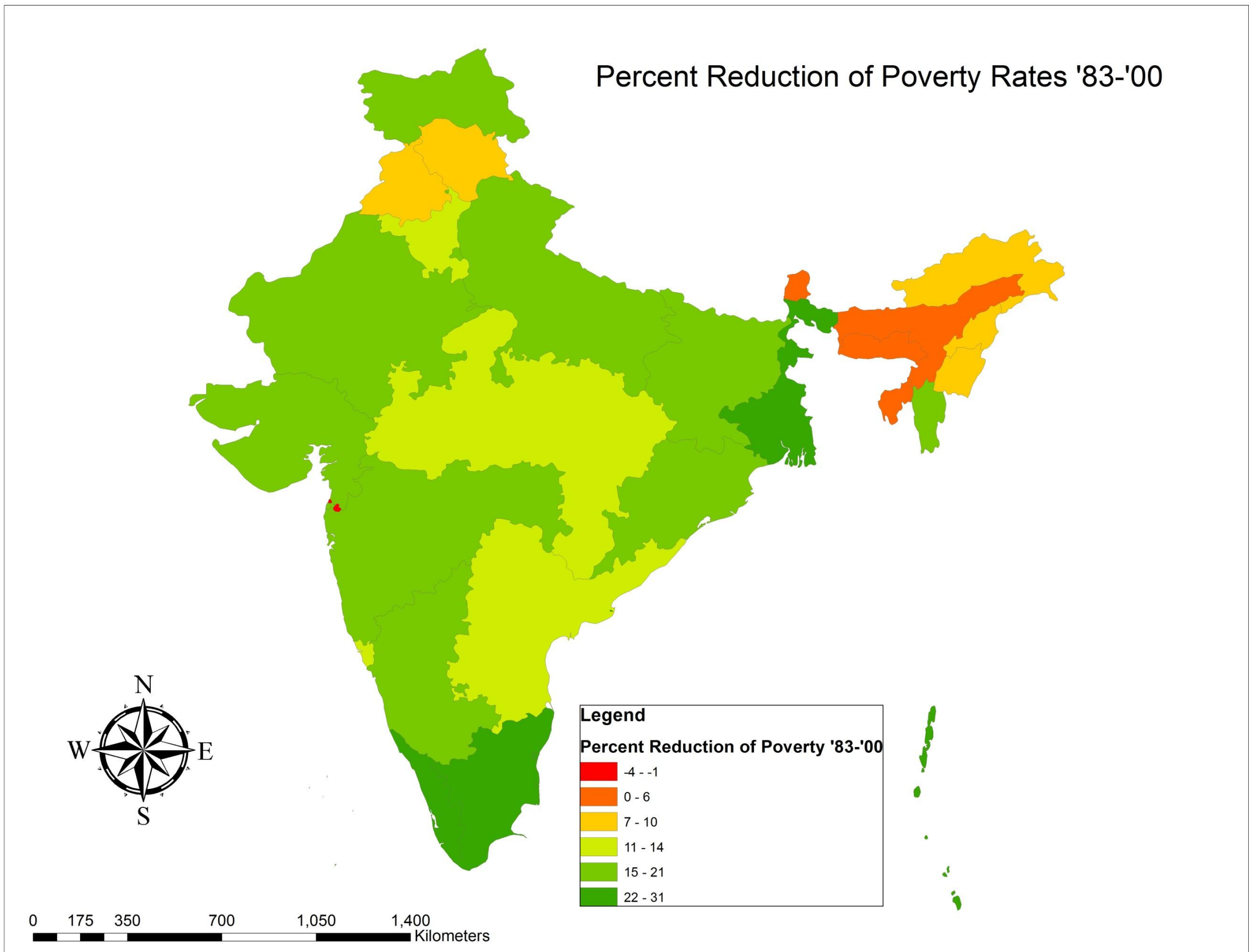


Figure 2. This figure depicts the percent reduction in poverty rates from 1983 to 2000. Areas in dark green signify larger reductions in poverty rates. The red areas show an increase in poverty rates. It was hypothesized that areas with significant decreases in poverty rates should have had a high literacy rate in the 1981 that would then propel reductions in poverty rates.

Change in Poverty Rates from 1983-2005

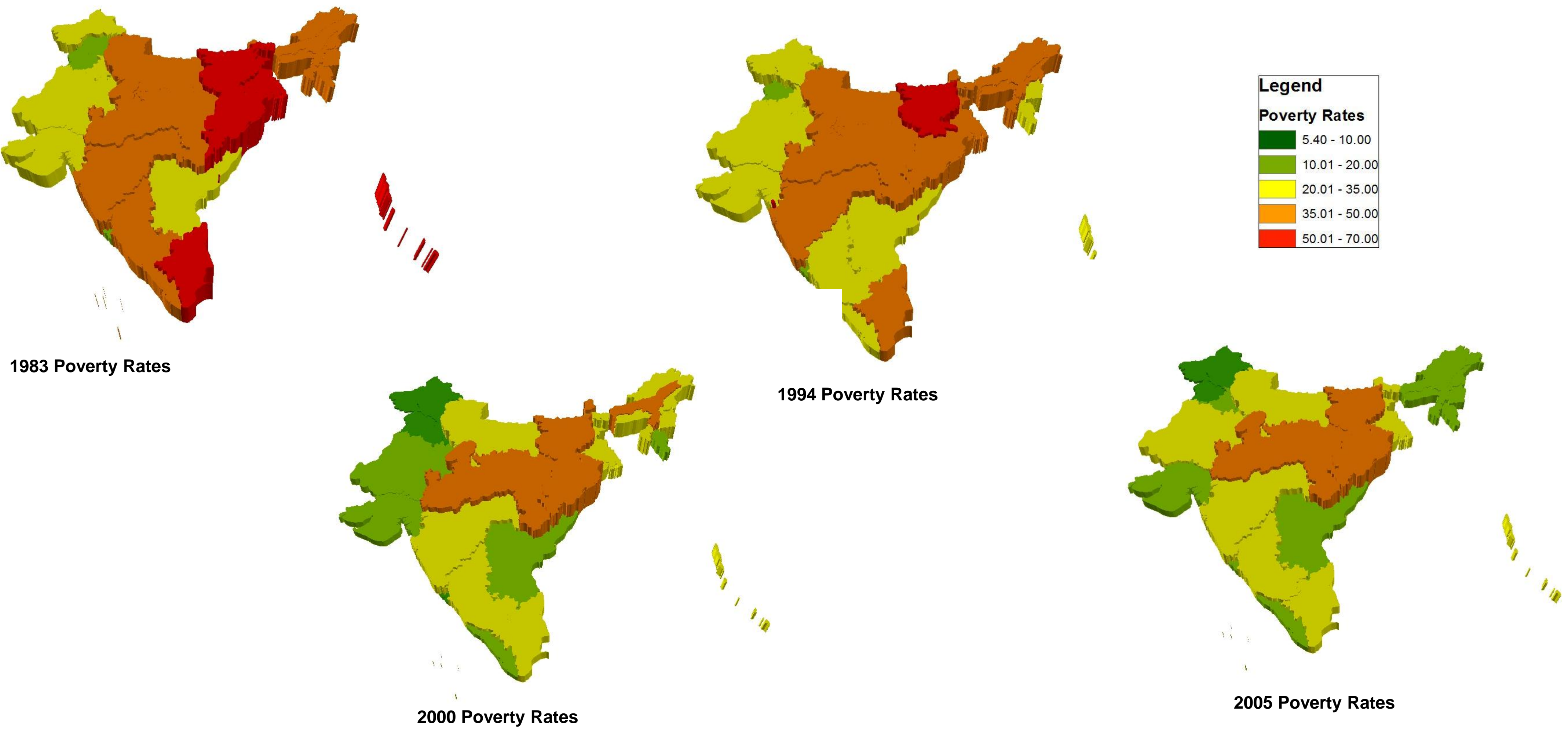


Figure 3. These maps show a 3 dimensional progression of poverty rates from 1983 to 2005. Areas of higher elevation have higher rates of poverty. Areas in lower elevation have lower poverty rates. Trends show that there have consistently been high poverty in north eastern India. In southern India there was a significant decrease in poverty from 1983 to 2000.

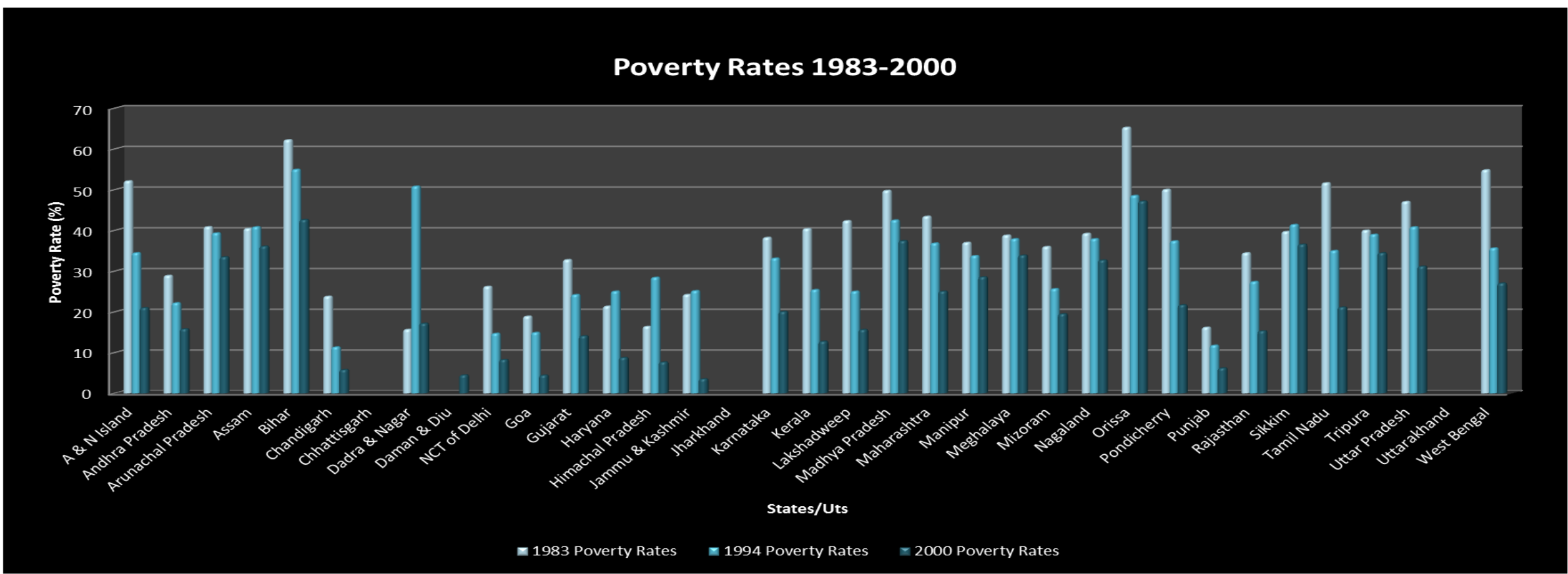
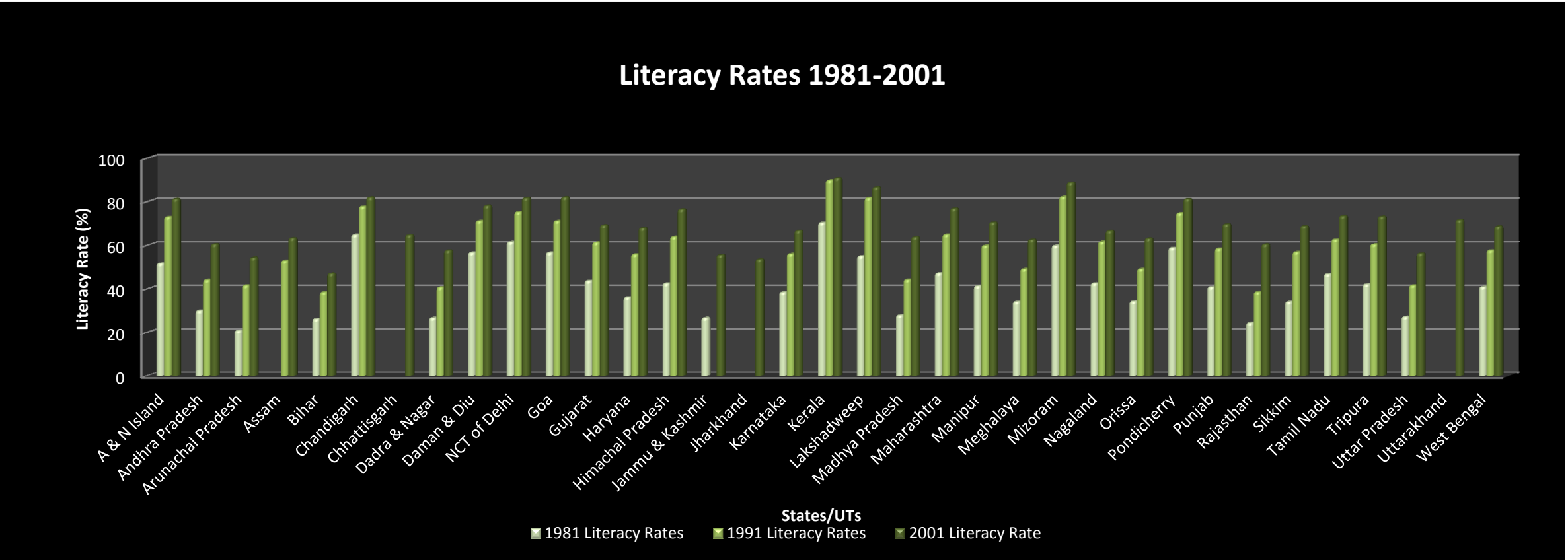
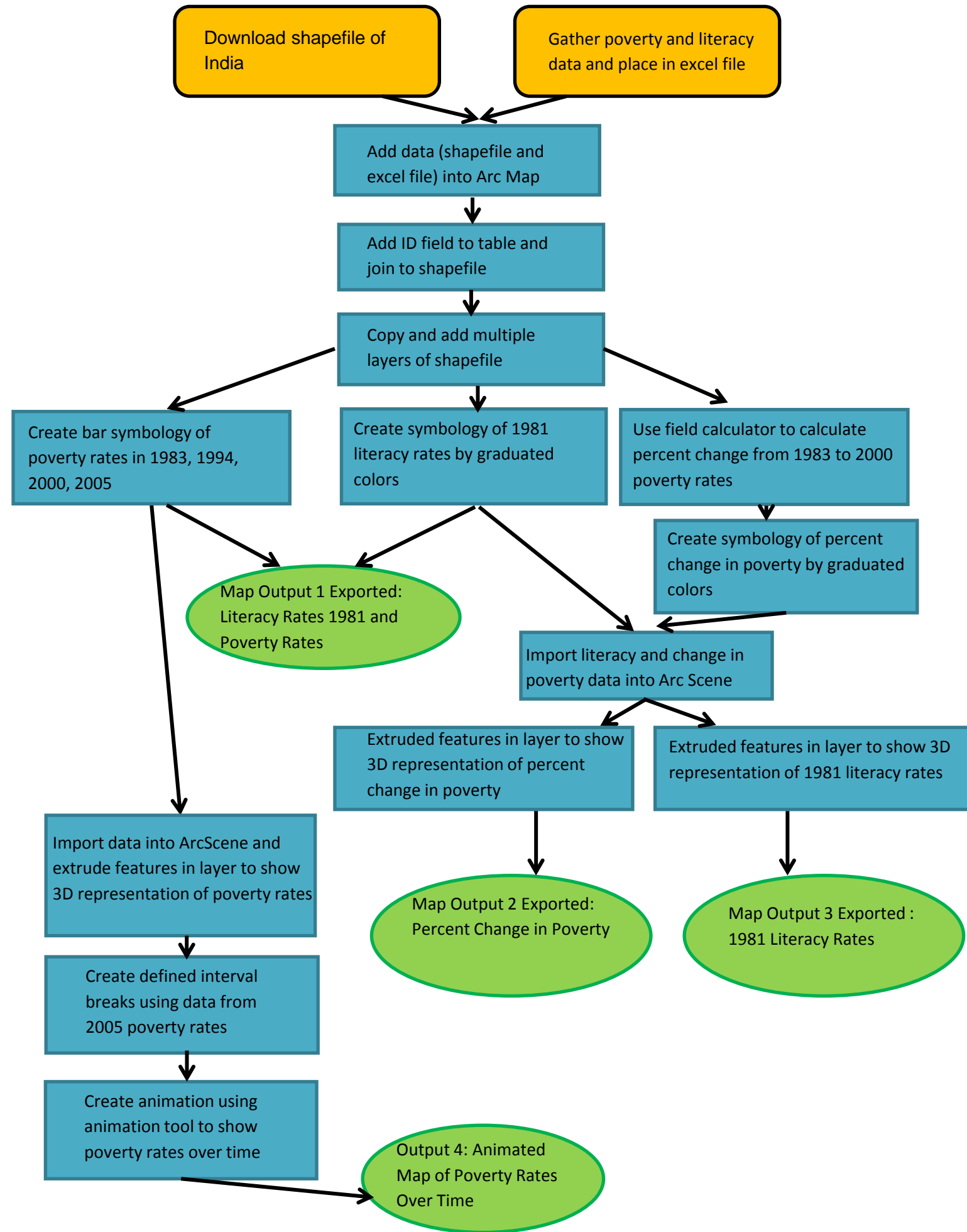


Figure 4: This graph displays poverty rates from 1983, 1994, and 2000 for each State/UT. Trends typically show an decrease in poverty over time. However, some states had a slight rise in poverty in 1994. Tamil Nadu and Andaman and Nicobar Islands had the greatest decreases in poverty. Dadra and Nagar actually increased in poverty and Sikkam had the smallest decrease in poverty.

Figure 5: This graph displays literacy rates for 1981, 1991, and 2001 for each State/UT. All states have shown an increase in literacy rates over time. The states with the maximum increase in literacy were Madhya Pradesh and Rajasthan. The states with the minimum increase in literacy were Kerala and Bihar.



Methodology



Analysis/Results

Figures 4 and 5 provide graphic representation of changes in both the poverty and literacy rates over the course of 20 years. In looking at these graphs, one can see how much or how little each state has progressed in relation to its original rates for these categories. Figure 2 and the 3D maps display India's reduction of poverty rates so one can visually interpret where poverty rates have reduced the most or least throughout India. In order to interpret how these poverty trends correspond with the literacy rates in each state, Figure 1 displays both of these variables on one map. The states' colors represent the literacy rates while the bar graphs show the change in poverty rates from 1983-2000 for each state. As expected, the states with the highest literacy rates in 1981 showed the greatest reduction in poverty in this time span while the states with the lowest change in poverty were those with lower literacy rates.

Interpretations/Conclusions

The findings of this study supported the theory that education leads to a reduction in poverty rates. The states whose education levels were the highest in 1981 saw a much more pronounced decrease in their poverty levels. Conversely, the states that did not have high literacy rates did not see as significant a reduction in poverty. These findings indicate that if a region is intent on reducing its poverty rates, then it should invest in the education of its people. Results may not immediately take effect, but in the long run, education will lead to lower poverty rates and will keep them low for years to come. With education comes economic growth, and with economic growth comes fewer people who suffer in poverty. Further studies could be done in this area of interest to investigate if primary and secondary education levels further influence the poverty rates in a country.

References

Central Bureau of Health Intelligence, Directorate General of Health Services. (2007). Retrieved from <http://cbhidghs.nic.in/writereaddata/linkimages/50269589818885.pdf>

India 2010. (2010). *Literacy*. Retrieved from <http://india.gov.in/knowindia/literacy.php>

Matsuura, K. (2007). Ending poverty through education. *UN Chronicle*, 54(1).

Ministry of Home Affairs, Office of the Registrar General and Census Commissioner. (2011). *State of Literacy*. Retrieved from http://www.censusindia.gov.in/2011-prov-results/data_files/India/Final%20PPT%202011_chapter6.pdf

Planning Commission. *Indian planning experience: a statistical profile*. (2001). Retrieved from <http://planningcommission.nic.in/data/central/stat/statistics5.pdf>

Planning Commission, Press Information Bureau. (2007). *Poverty estimates for 2004-2005*. New Delhi: Retrieved from <http://planningcommission.gov.in/news/pennar07.pdf>

Tilak, J.B. (2005). *Post-elementary education, poverty, and development in India*. Retrieved from http://www.cas.ed.ac.uk/_data/assets/pdf_file/0018/28323/Tilak_India_PBET_WP6_final.pdf