



Assessing the Impact of the Jaipur Foot Organization in India

A study inspired by research to optimize the \$30 Jaipur Foot developed by the Bhagwan Mahaveer Viklang Sahayata Samiti Institute

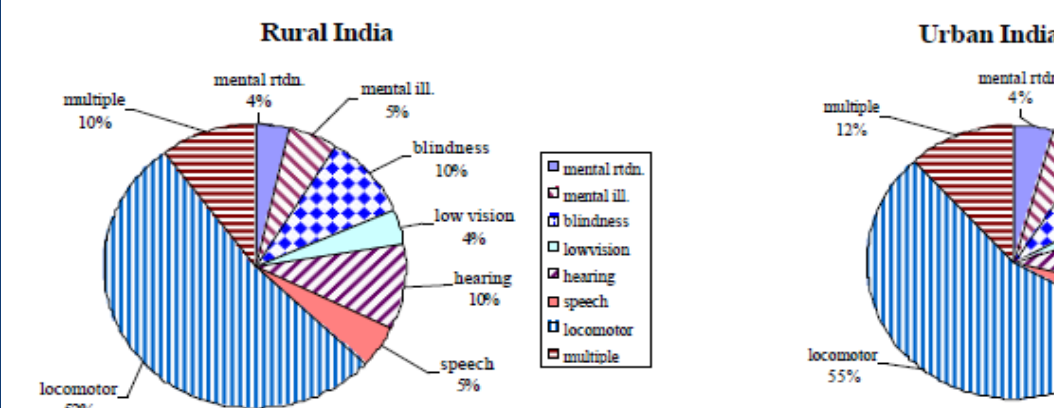
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INTRODUCTION

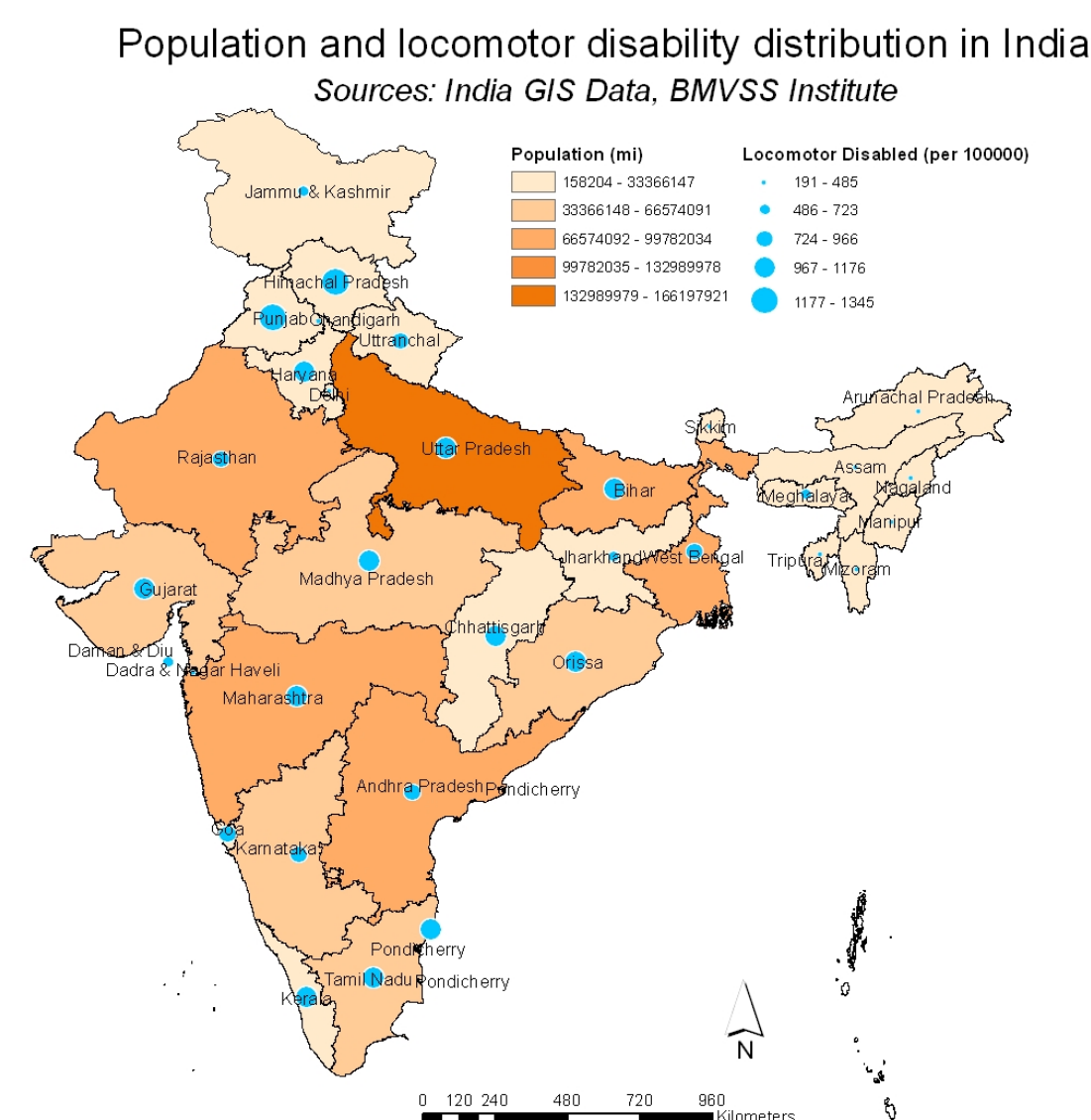
According to the National Sample Survey Organization of India, disabled people constitute approximately 2% of India's population.¹ Locomotor disability is the most prevalent type of disability, affecting 56% of disabled persons. Especially in the rural areas the cost of acquiring an artificial limb or calipers is unattainable.



The Bhagwan Mahaveer Viklang Sahavata Samiti Institute is the largest non-governmental organization in the world fitting artificial limbs and other aid devices to people with locomotor disabilities.³ BMVSS has developed the \$30 Jaipur Foot, and its services are free of charge for those who cannot afford them.³

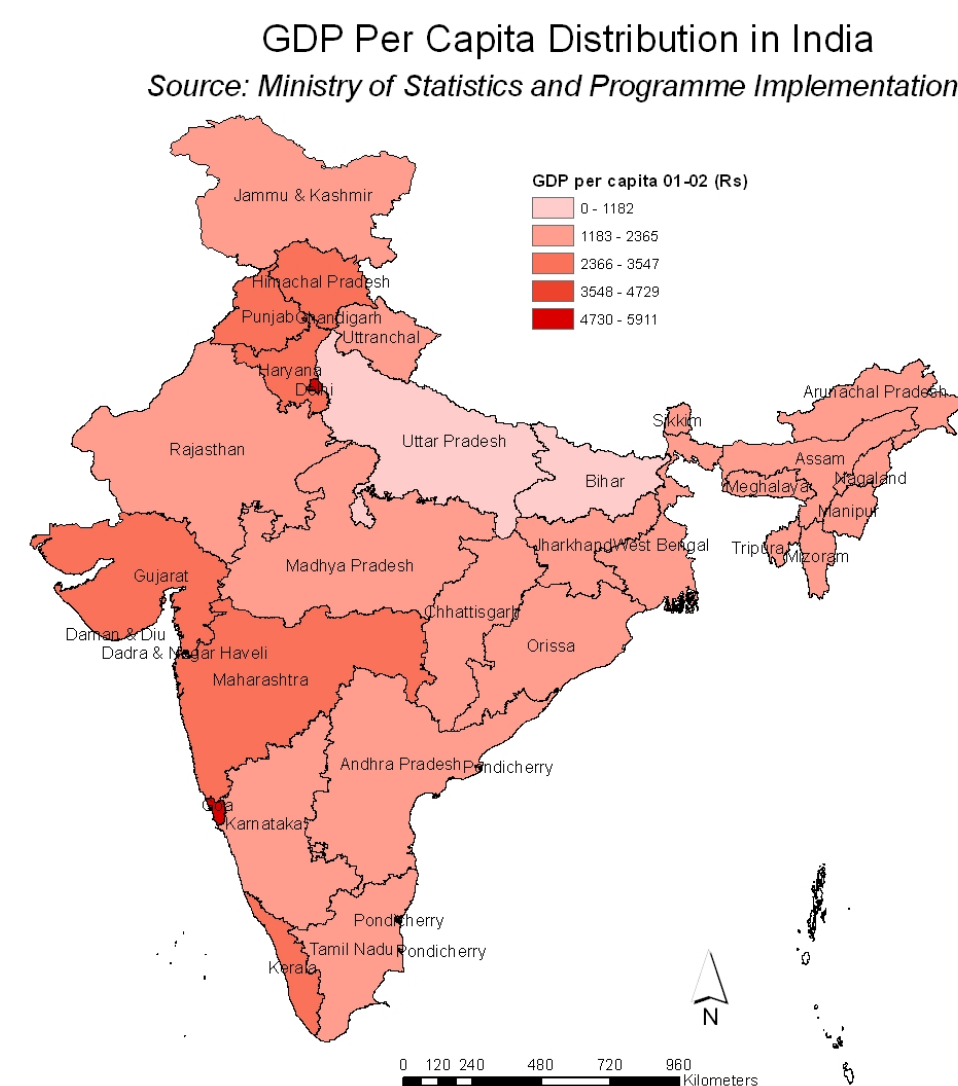
OBJECTIVES

- Determine those states that are poor, with a large population and a high incidence of locomotor disability,
- Determine which states, if any, are in gravest need for locomotor disability aid/appliance fitting for the financially weak, but have been out of the radar so far.



METHODS

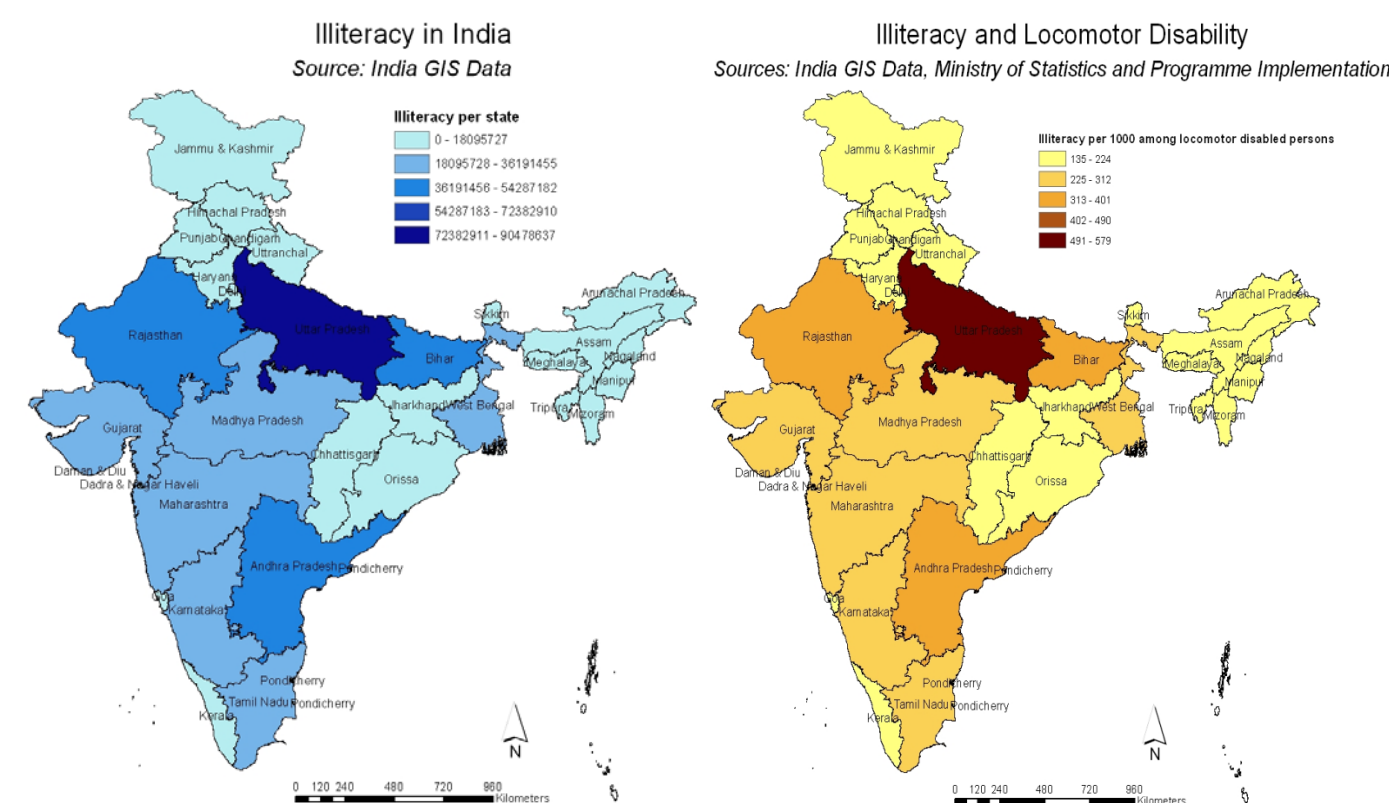
The national and state borders of India, as well as the total population per state, were obtained from India GIS data.⁴ The Ministry of Statistics and Programme Implementation website was the source of state GDP per capita figures for 2001-2.²



The National Sample Survey Organization (NSS) 58th round report on disability was used to obtain state level information on different parameters of disability.

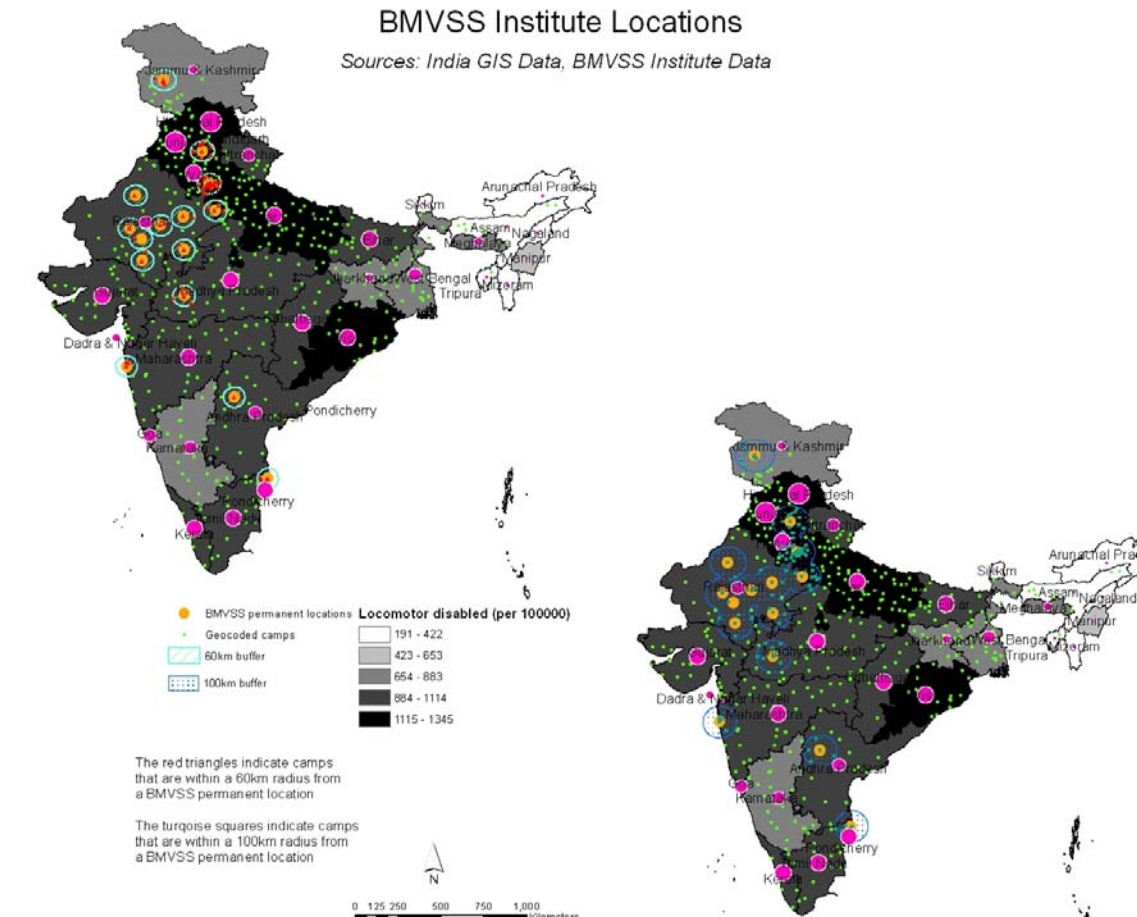
For the variables not presented per state, state level distribution was calculated by

$$x_i = \text{population}_i \times \text{percent}_{\text{locomotor}} \times \frac{x_{\text{all-India}}}{\text{sample}}$$



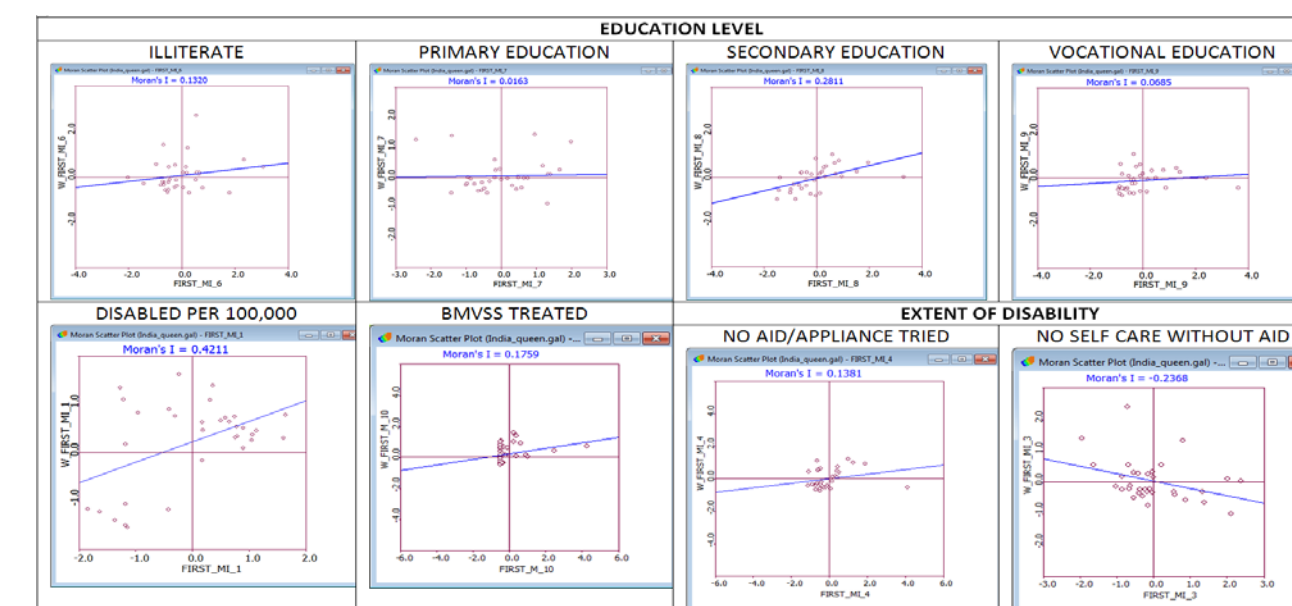
The figures obtained from the BMVSS Institute for the fittings per camp and for the permanent locations were geocoded. Buffers were created to assess the potential redundancy of camps. ESDA and ANOVA for the data of the BMVSS fittings were carried out in GeoDa.

RESULTS



EXPLORATORY DATA ANALYSIS

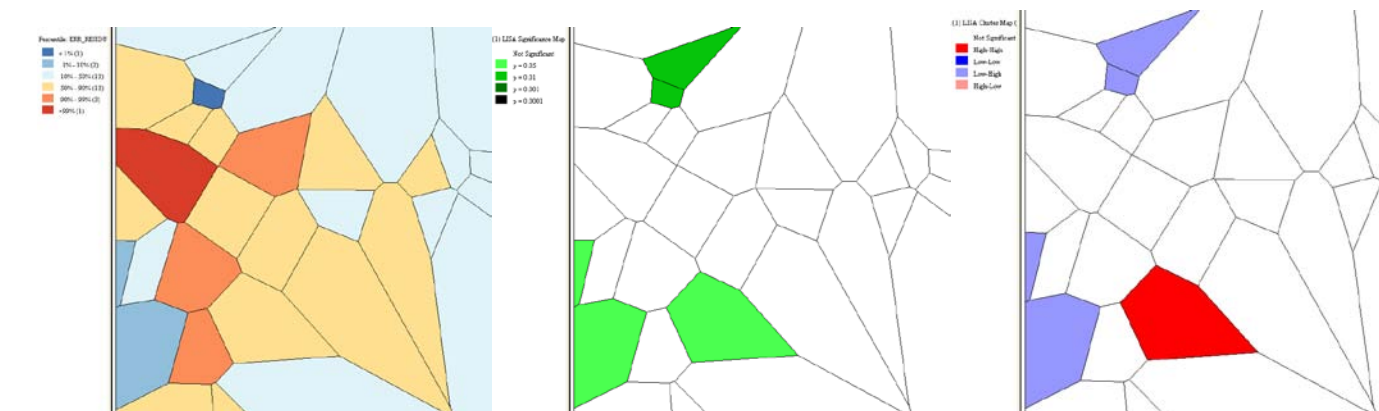
There is a strong positive spatial autocorrelation for the number of locomotor disabled persons and for those among them that have received secondary education or higher. As hypothesized, there is a positive spatial autocorrelation for the locations of BMVSS treatment.



ANALYSIS OF VARIANCE – SPATIAL REGRESSION

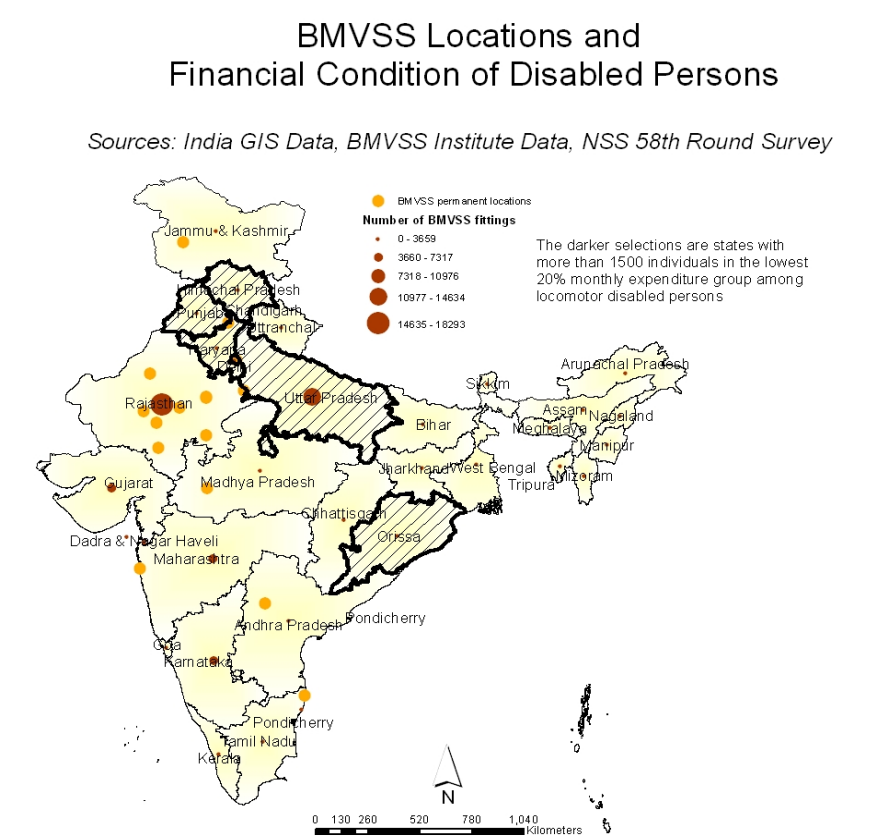
The distribution of the camp locations depends on the total state population and on the levels of locomotor disability per state. The financial condition of each state and the lack of accessibility to treatment are not considered when determining camp locations.

The percentile map of the error residuals and the cluster map from the univariate LISA statistic illustrate error clustering.



CONCLUSION

The choice of camp location overall is not particularly biased toward certain states. Nevertheless, the financial condition of the disabled in different states should be taken more into account to improve accessibility to BMVSS technology.



My model has many limitations, since I assumed a 4-year cycle between traveling temporary camps. The data for locomotor disability in India were obtained from a 2002-2003 survey with extrapolation. A more robust model can be designed with more thorough and accurate data spanning a greater time period.

REFERENCES

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- Ministry of Statistics and Programme Implementation, Government of India. Gross State Domestic Product at Current Prices (2001-2002). 24 April 2011. www.mospi.nic.in/6_gspd_cur_9394ser.htm.
- Bhagwan Mahaveer Viklang Sahavata Samiti Institute. 20 April 2011. www.jaipurfoot.org.
- India GIS Data. Government 1008 Course Shapefile Database.

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