

Case Studies of NASG Implementation in Four Countries

**Ethiopia
Nigeria
India and Tamil Nadu
Zimbabwe**

Executive Summary

Background

Globally, maternal mortality is a leading cause of death for reproductive age women. Obstetric hemorrhage (OH), which includes hemorrhage from multiple etiologies during pregnancy, childbirth, or postpartum, is the leading cause of maternal mortality and accounts for one-quarter of global maternal deaths. The Non-pneumatic Anti-Shock Garment (NASG) is a unique first-aid device for hemorrhage that can be applied to reverse shock, buying time for a woman to reach a health care facility for definitive treatment. The NASG has been shown to reduce measured blood loss, severe morbidity, emergency hysterectomies, and maternal mortality among women suffering from OH. Despite successful field trials and support from safe motherhood organizations, contextual differences between countries affect implementation and determine the extent and success of scale-up. In this paper we explore contextual factors affecting the speed and depth of NASG adoption using a policy analysis framework.

Methods

Using the Yamey “Scaling up Global Health Interventions” framework¹, we examined similarities and differences in NASG uptake in four countries: Ethiopia, India, Nigeria, and Zimbabwe, which represent a range of implementation experiences. Because of the wide range of differences in India, we also examined one Indian state, Tamil Nadu, separately from the rest of India. Primary data sources were individual interviews conducted with 17 key informants (KIs), at least two from each country. These KIs were from the Ministries of Health, Social Welfare, and/or Women’s Issues; maternal health providers; or program specialists working with the NASG. In addition, secondary sources included policy- or implementation-focused informal interviews with MOH and other maternal health stakeholders; discussions with maternal health stakeholders in dissemination meetings; reviewing published and unpublished outcome and process reports by NGOs implementing NASGs and/or by researchers and clinicians studying NASG effectiveness; reviews of media produced in each country about the NASG; NASG presentations and posters; and NASG implementation-focused panels/workshops at international maternal health meetings. The major domains examined were attributes of the NASG; attributes of the implementers; delivery strategies; attributes of the adopting community; the socio-political context; and influences of being involved in research. We then used the Multiple Streams Model of policy analysis^{2,3} to understand how these contextual factors affected speed of uptake and depth of penetration. Data Sources are in *Ex Summary, Appendix 1, p. 4*.

Results

Facilitating factors to successful implementation and scale-up included community needs; the simplicity of the NASG; status and entrepreneurship of local and international champions; access to extensive training sessions; WHO recommendation; and successful UCSF trial results. Impeding factors to successful implementation and scale-up included limited health infrastructure; cost of the NASG; initial resistance by providers and policymakers; lack of influential policy entrepreneurs; inadequate return and exchange programs; and lack of political will. Acceptance and scale-up were accelerated by the convergence of the streams: high maternal mortality; need to reach MDG 5; politics (national mood, pressure group campaign, administrative or legislative turnover) influential policy entrepreneurs; the opening of “policy

¹ Yamey, G. Scaling up global health interventions: a proposed framework for success. *PLoS Medicine*, 8(6): e 1001049. Doi:10.1371/pmed.1001049

² Kingdon, J. 1996. *Agendas, alternatives, and public policies*. NY: Harper Collins. Chaps 1-2.

³ Zahariadis, N. (2007). *The Multiple Streams Framework*. In *Theories of Policy Process*, 2nd Ed. Paul A. Saatiar, Ed. Chapter 3, Boulder, CO: Westview Press

windows”; and the ability and/or drive of policy entrepreneurs to rapidly seize the policy window opportunity. The implementation process can be viewed as a continuum of speed and depth of penetration as shown in: *Executive Summary Appendix 2, p. 7* and *Maps of Country by States Introducing or Scaling Up, Appendix 3, p. 9-13*.

Conclusion

Each of the four countries is at a different stage in an implementation continuum, but addressing crosscutting issues can help us understand better what conditions are favorable to scale-up. All countries shared the “problem” of high MMR from hemorrhage due to delays; the NASG fit as a “solution” due to its simplicity and its ability to buy time for women during delays. The majority of stakeholders advocated for increased countrywide use. However, the convergence of political will/favorable politics, a policy window and strong policy entrepreneurs accelerated acceptance and scale-up, while the lack of these, despite the same needs, facilitators, and barriers, delayed/hindered scale-up. There was a continuum of rapidity of uptake/depth of penetration ranging from Ethiopia, where multiple streams converged (problem, fitted solution, policy, politics, policy window, and strong and active policy entrepreneurs) to Zimbabwe (problem, solution, lack of policy, disruptive politics, narrow policy window, and lack of policy entrepreneurs). Whether the NASG is implemented into an already-functioning EmONC health system, or seen as an individual add-on, also affected scale-up. While many factors can be controlled for and anticipated, the policy entrepreneurs and timing of policy windows seem to be the key difference between the countries along the continuum of scale-up. However, with the latest trial results about to be published, NASG prices dropping, new, local manufacturers, and recent WHO approval and guidelines, it is possible that a “tipping point” has been reached. We may see globally that more policy windows will open and more local policy entrepreneurs will be able to take advantage of those windows, as we are beginning to see already in Cambodia and Niger. A new era of converging streams could be seen in 2014.

Appendix 1: Data Sources and Summary of Data Collected in 4 Countries and Tamil Nadu

DATA SOURCES

	Ethiopia	Nigeria	Tamil Nadu	India (not incl. TN)	Zimbabwe
Number of Key Informants 1:1 Interviews (n=17)	2	8	1	3	3
Other Sources of Information	<ol style="list-style-type: none"> 1. Presentation at GMHC 2. Video 3. Meeting with MOH and CHAI staff 	<ol style="list-style-type: none"> 1. Pathfinder Report, 2012 2. 2012 FIGO Meeting 3. Meetings with Pathfinder staff and SOGN members 4. Women Deliver Policy Workshop, 2013 	<ol style="list-style-type: none"> 1, Pathfinder Report, 2012 2. 2012 FIGO Meeting 3. GMHC meeting 4. Women Deliver Policy Workshop, 2013 5. Discussions with Ministry 2010-2013 6. India Dissemination meeting, 2013 	<ol style="list-style-type: none"> 1. Pathfinder Report, 2012 2. India Dissemination Meeting 2013 3. 2012 FIGO Meeting 4. 2012 and 2013 Meetings with MOH 5. Discussions with Pathfinder staff 6. Discussions with WHO India 7. Vissco, NASG manufacturer in India 8. Women Deliver Policy Workshop, 2013 	<ol style="list-style-type: none"> 1. NIH and Gates reports 2. Research Papers 3. Meetings with NGOs, Funders, MOH, throughout study, but policy specific meetings held in 2012 and 2013 4. Zimbabwe Dissemination Meeting 2013
MOH Individual Contacts	5	13	5	13	5
NGO Contacts	3	5	3	27	8 (mainly local)
Education Contacts	1	6	22	16	12
Prof. Association Contacts	1	7	7	25	15

SUMMARY OF DATA COLLECTED

Year NASG Introduced	2011	2004	2007	2007	2009
Research Site	NO	YES and Intervention	Pilot	NO	YES, research only
Number of NASGs in Country as of 2013	>2000	>5000	1200	>2500	90
Number of Documented NASG Use		1400			1073
MMR (2010)	470	630	98	200	570
MOH approval for NASG	YES	YES	Informally from 2007, formally 2011	Bihar, Rajasthan, Orrisa, Assam	Pending
NASG added to Health Providers' Curriculum	Unknown	YES: nurses and midwives	All medical personnel and ambulance	Udaipur	All medical students, nursing students, and midwifery students trained in Harare 2009-2013
NGOs Involved	YES	YES	YES	YES	NO
Strong Champions/What Professions	YES: High level (Ethiopia) FIGO OBs/NGO & academics/MOH	YES: High level (SOGON) FIGO OBs/NGO/MOH	Powerful, proactive from Ministry and from Professions	Partial: after 6 years, FOGSI coming on board, One strong central Ministry champion	YES: fewer and in less powerful positions, academia, faculty, researchers, and doctors in training
Number of States where NASG First Introduced	2	4	NA	4	Harare, only
Number of States Scaling Up	6	25	NA	7	None
Levels of Facilities	All	All	All facilities	All	Tertiary and Primary in Harare
Other Levels	Ambulance, community	Ambulance, community	Ambulances	Ambulances in Agra	NO

Funding	CHAI, MOH	Research, Pathfinder, MOH, UNFPA	Pathfinder, MOH	Pathfinder, MOH in TN	Research funding only, possibility of Elma Foundation Funding for Local NGO scale up
Cost Issues	YES @ original price	YES@ original price		YES @ original price	YES: Opinion that at \$60.00 not a big cost issue
Delivery Strategy	YES	YES		YES	Not Known
Exchange and Return Issues	Not in CHAI facilities	Unknown		Unknown, not in TN	Not in Research Project
Local Production	NO	YES: Stork		YES	NO

APPENDIX 2: Multiple Streams Convergence Table

**Ethiopia
Nigeria
Tamil Nadu, India
India
Zimbabwe**

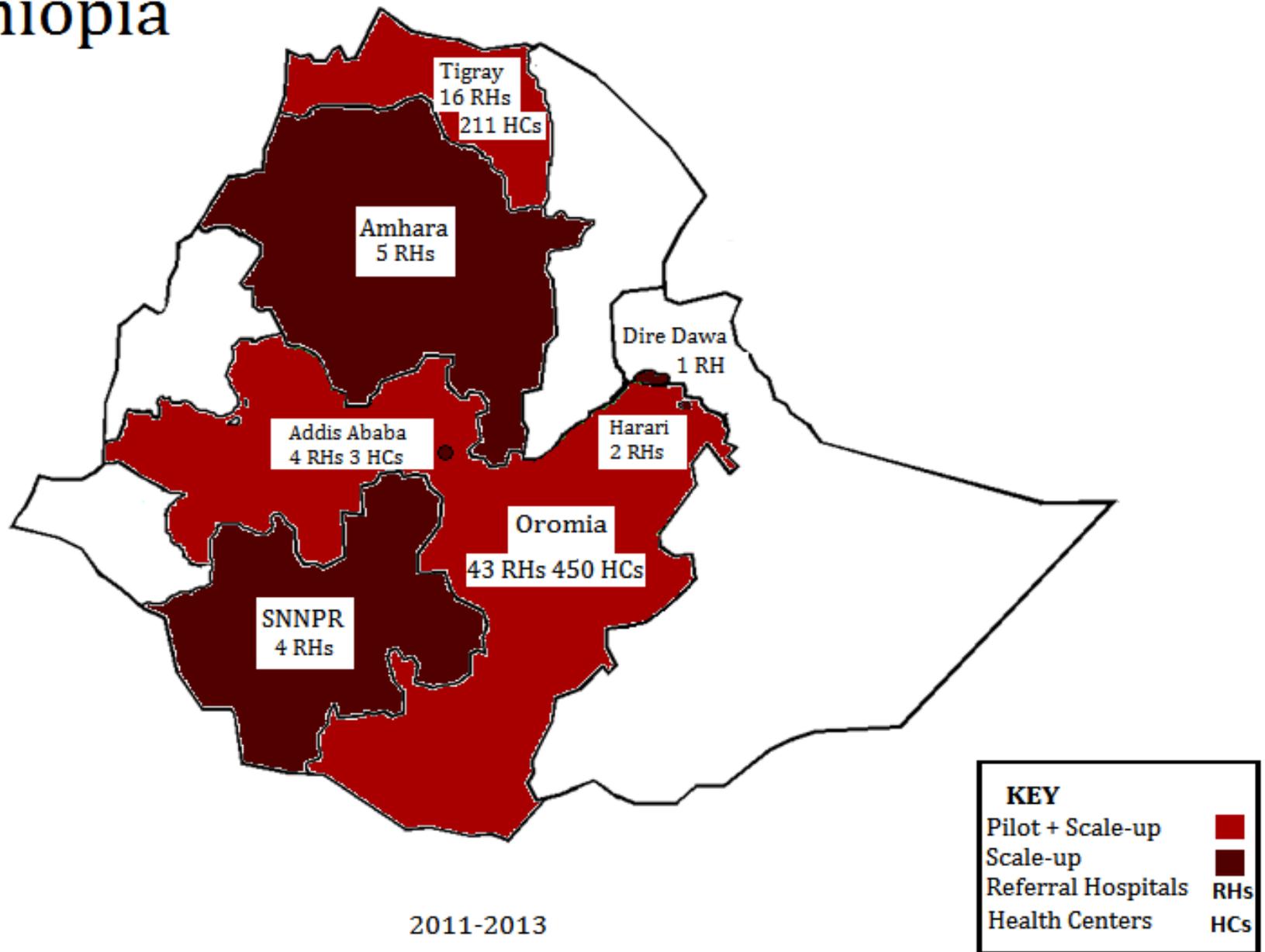
Darker Colors in Table Represent Deeper Penetration and Greater Scale-up

	Ethiopia	Nigeria	Tamil Nadu	India	Zimbabwe
Problem	High MMR, 2 nd & 3 rd Delays, not reaching MDGs	High MMR 2 nd & 3 rd Delays, not reaching MDGs	MDG commitment to reduce MMR from 97 to 30	High MMR 2 nd & 3 rd Delays, not reaching MDGs	High MMR 2 nd & 3 rd Delays, not reaching MDGs
Policy	2011: Central policy rapidly put in place.	State policies varied, slow start from 2004-2007, but majority of states by 2010	Policy start 2007, continued support through 2014, MOH signed into policy 2011	No real progress except for funded states on small scale basis 2007-2012, turning Point with national government 2012-2014	No policy as of 2013
Politics	NGO leadership long standing members of powerful professional associations and political leaders they came together on wanting to do something rapidly	In States with: 1. strong Health Ministry, 2. convergence with MOH and NGO leadership, and 3. with funding; NASG more rapidly taken up. Kano an example of politics keeping NASG at lower levels	2007 DHFW on board, change of government continued with renewed emphasis in 2009 and 2011	2007-2011: MoHFW expressed dissatisfaction with Pathfinder approach and lack of inclusion, change coming 2013	2013: Government felt left out of research, but verbally committed after dissemination, national politics not committed to maternal health
Policy Window	2011: Narrow funding window for CHAI's MNH project, need to show results, UCSF visit with MOH	2004: Multiple Media Windows, SOGON windows annually with reports back to MOH, UNICEF media, UNFPA "accidental champion" event, 2007 Nigeria Dissemination Meeting, various funding windows	2007: Government invited PI to bring NASG only, Government assumed training, planning, dissemination 2010-2012	2012-2014: WHO Guidelines, COGI meeting, 2012, attended by FIGO president elect, FOGSI leadership, 2013, India Dissemination Meeting, 2013, FOGSI elections 2013, meetings with MoHFW, 2013 suggestion to put on ALS/BLS ambulances nationally and FOGSI regional trainings	2013: Zimbabwe/UCSF Dissemination meeting, no activity, potential new window opening with foundation funding, late 2013-2014
Policy Entrepreneurs	MOH and NGO led the way	Academic/Clinicians from Ibadan, Lagos, Katsina, Prof. Ojengbede, Prof. Fabwamo, Pathfinder leadership, UNICEF, Statal MOH leaders and Minister of Women Affairs and Social Development	Influential MOH, academics, training institutions, UNICEF, Emergency Vehicles	Only one in National Government 2007-2012, post COGI meeting & WHO guidelines, FOGSI & MOH	Academic leadership at UZ-UCSF

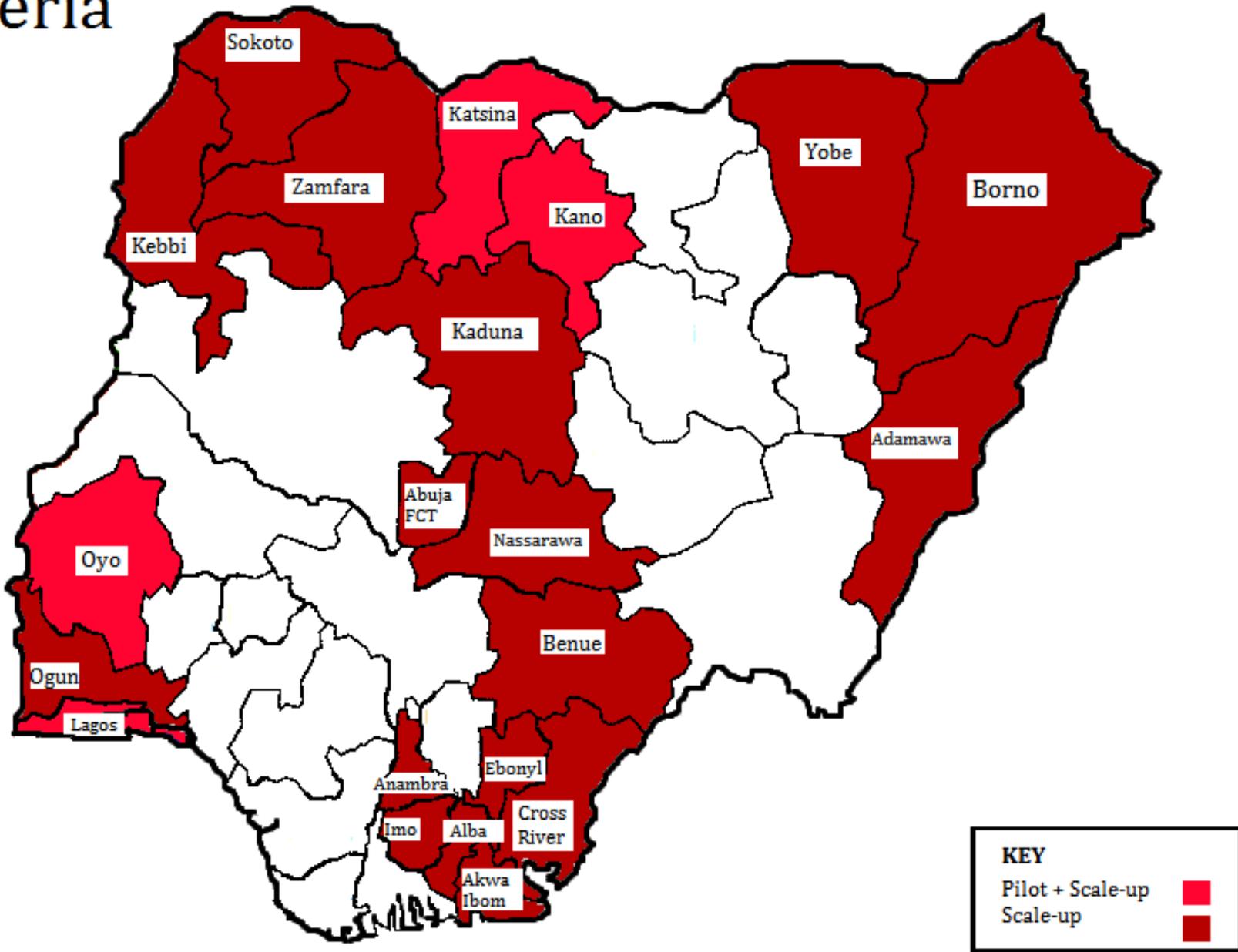
NASG Pilot and Scale-up by State
Ethiopia
Nigeria
India
Zimbabwe

**Darker Colors on Map Equal Deeper Penetration
and Greater Scale-up of NASG**

Ethiopia



Nigeria



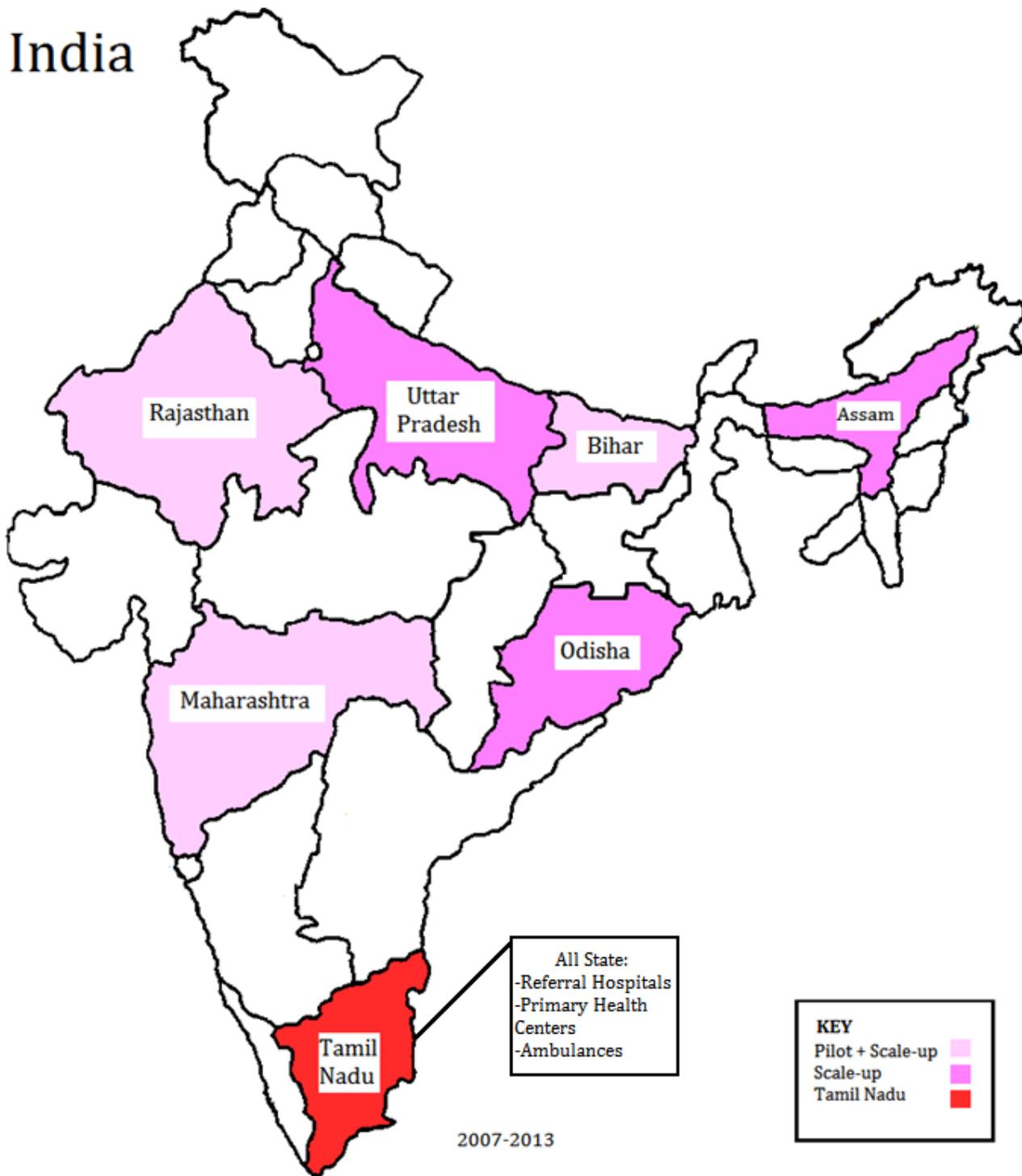
2004-2013

KEY

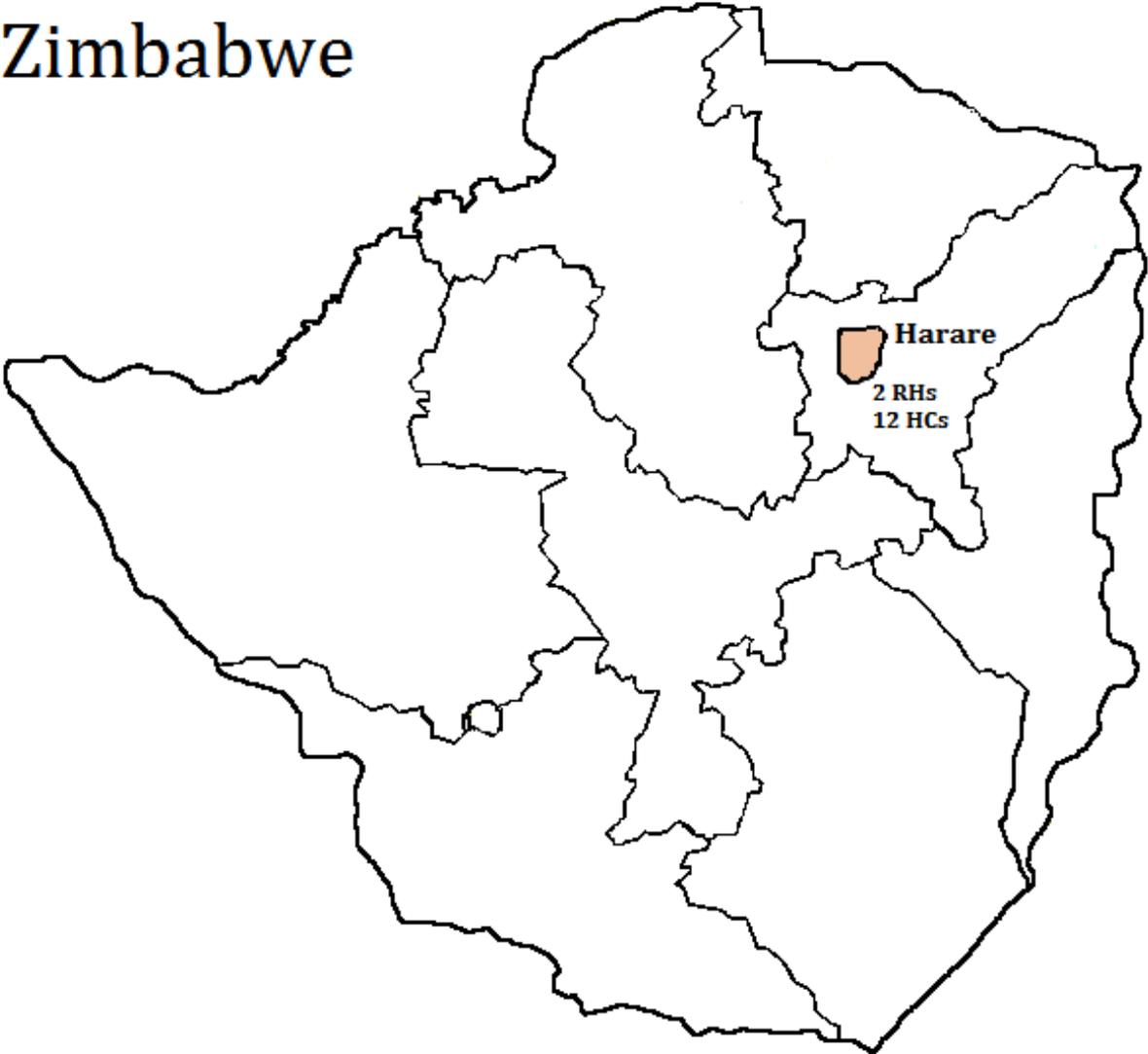
Pilot + Scale-up
Scale-up



India



Zimbabwe



2009-2013

KEY

Research Project	
Referral Hospitals	RHs
Health Centers	HCs