

# IDD control in India: triumphs and challenges

India was one of the first countries to introduce iodized salt, but the national program has experienced setbacks along the way. This review looks at past efforts, highlights key challenges and proposes a future agenda for salt iodization in India.

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Indian USI ensures adequate iodine for these children in Kerala

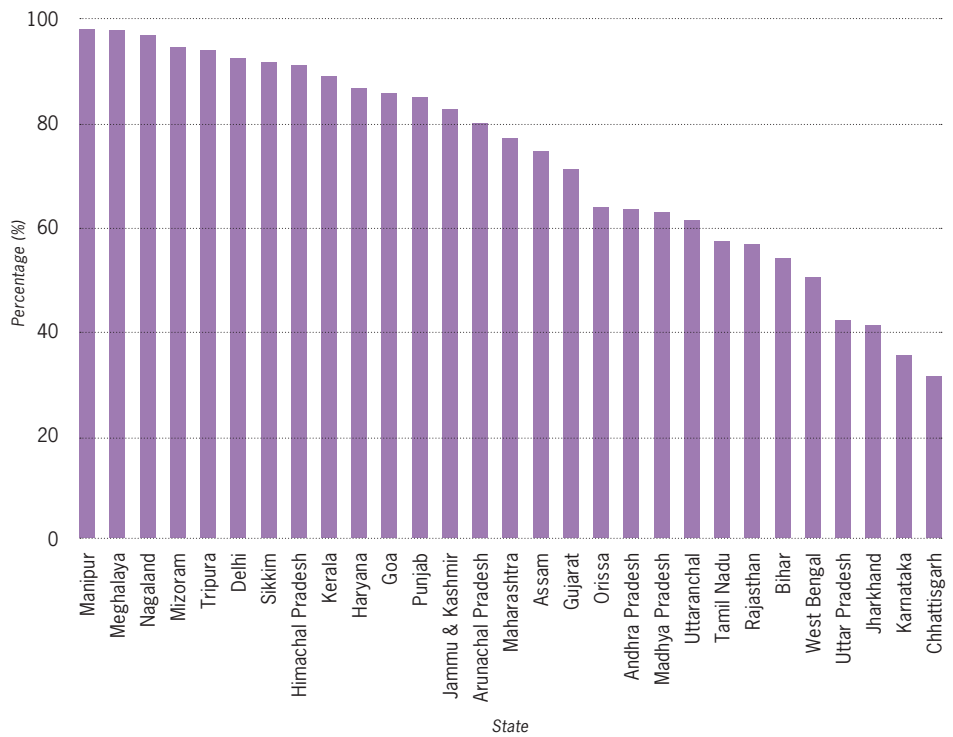
**Background**

India recognized iodine deficiency as a national health concern after independence and began supplying iodized salt to its endemic population as early as the 1960's. The Government of India launched the National Goiter Control Program (NGCP) in 1962, in an attempt to provide iodized salt to identified goiter endemic districts. A turning point came in 1983 when the eradication of goiter was included as 'Point Eight' in the Prime Minister's 20-point National Development Program. Consequently, in 1983, the government made a historic policy decision to strive for USI and permitted the commercial production of iodized salt by the private sector.

Efforts were made in a phased manner starting in April 1986, to increase the production, demand and supply of iodized salt. In 1986, the USI policy was announced and the 'smiling sun' logo, a voluntary certification of iodized salt, was developed. In 1992, the NGCP was renamed the National Iodine Deficiency Disorders Control Program (NIDDCP). In the past two decades, the national production of iodized salt has seen an eightfold increase – from 0.7MMT in 1985–1986 to currently ~ 6.2MMT. Also, the government of India's 11th Five Years Plan (2008–2012) reiterates the need to eliminate IDD and recommends USI as the best means to achieve this goal.

Yet, the implementation of the program has experienced some major challenges in the past two decades. The iodine level of the

**Figure 1 The proportion of households using adequately iodized salt, by Indian State.**



salt that moves by rail is monitored prior to shipment, while there is no monitoring of the quality of salt transported by road. The transportation of iodized salt by rail has been subsidized. However, the freight costs for iodized salt increased substantially from April 2002, thus reducing the cost advantage of rail shipment. Consequently, the unchecked movement of inadequately iodized salt by road has increased dramatically. In an effort to restore the transportation of iodized salt by

rail, the Ministry of Railways has provided for graded concessions in the freight costs of edible salt since 2003 depending on the distance of salt transportation.

In 1996, the salt industry was de-licensed, making it difficult for the Salt Department to regulate. In 1997, the Central Government enacted a national ban on the sale of non-iodized salt for edible purposes, under the Prevention of Food Adulteration Act. The Act stipulates the minimum iodine content of salt at the production and consumption levels at 30 and 15 ppm, respectively. However, due to the dissenting voices raised against USI, the central ban was lifted in 2000. While the majority of the states maintained the ban, Gujarat and Orissa revoked it. It took 5 years of intensive advocacy with the central government to reinstate a nation-wide ban on the sale of non-iodized salt in 2005. At present, all states have imposed a complete ban.

**Household use of iodized salt and population iodine status**

The household coverage of adequately iodized salt in India has undergone major ups and downs in the past two decades. Nevertheless, efforts to intensify USI activities, especially in the past few years, have led



**Indian mothers and children benefit most from iodized salt**

to a remarkable improvement in the consumption of adequately iodized salt, with the national coverage reaching 51% in 2005–2006 and 71% in 2009. Still, in 2009, nearly 20% of households were found to be consuming inadequately iodized salt and 9% were using salt that was not iodized.

The proportion of households using adequately iodized salt varied widely by state in 2009, ranging from ~ 98% in Manipur to ~ 30% in Chhattisgarh (Figure 1).

Interestingly, data indicate a clear urban-rural (Figure 2) and rich-poor differential (Figure 3) in salt iodization, with better coverage of adequately iodized salt in urban areas and richer wealth quintile, leaving the most disadvantaged population vulnerable to IDD.

Currently, there are no national data on the iodine status of the population based on urinary iodine concentration (UIC). The most recent weighted estimate pooled from subnational surveys indicated that the median UIC of the population was 154 µg/L. Although India is classified as a country with adequate overall iodine intake based on the median UIC, it is estimated that 249 million people including 8 million newborns annually are still unprotected from the lifelong consequences of IDD.

**Current status of the USI program and challenges to overcome**

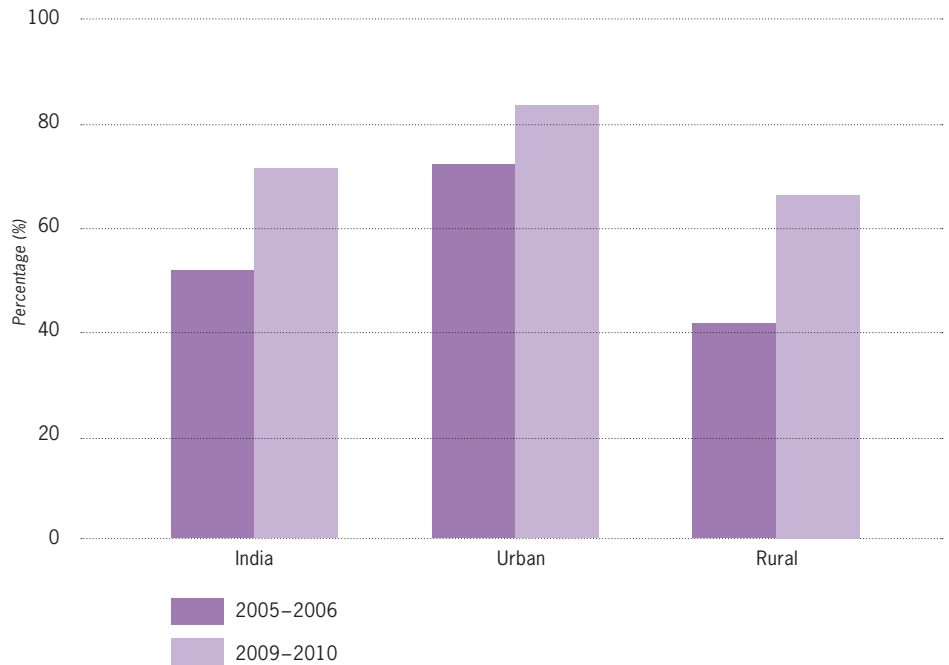
Ensuring political commitment

The Government’s commitment to eradicate IDD as an important public health issue has been confirmed at many national and international events. Yet, despite such political will, IDD is not recognized as a priority in the health sector, resulting in a weak strategy formulation and poor program implementation. In addition, weak enforcement of the legal ban on the sale of non-iodized salt for human consumption is an on-going challenge together with the ban only applying to salt for human consumption. Also, the dual standard for levels of salt iodization at production and household makes the enforcement at the production a real challenge.

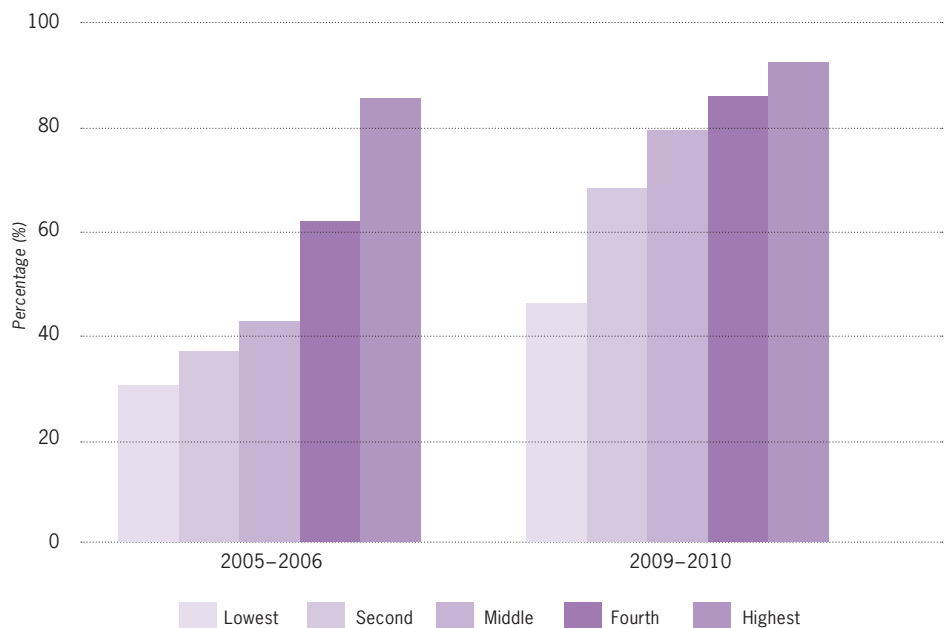
Forming partnerships and coalitions

In April 2006, the National Coalition for Sustained Iodine Intake was officially launched with the objective of bringing key part-

**Figure 2** The proportion of urban and rural Indian households using adequately iodized salt.



**Figure 3** The proportion of Indian households using adequately iodized salt, by wealth quintiles.



ners together for regular dialogue and monitoring progress towards acceleration of USI. The coalition is also expected to serve as a platform for high-level advocacy, streamlined communication and to act as a pressure group to ensure timely action. The coalition has

held regular meetings and served as a platform for dialogue and exchange; however, its overall structure for coordination needs to be strengthened if the coalition is to fulfill its role fully.



*Ensuring availability of adequately iodized salt*

India is the third largest salt-producing country in the world after China and the USA, with an average annual production of ~18.6 MMT in 2010–2011. There are 13 000 salt producers and 90% of them are small producers. India has become self-sufficient in the production of iodized salt.

A significant barrier towards improving the distribution of affordable, adequately iodized salt is the lack of capacity and/or commitment of the medium and small producers and traders. Iodization is often viewed as an additional burden as they operate within narrow profit margins and commonly use less effective, poorly maintained equipment. Iodized salt is often procured by wholesalers who purchase the salt in bulk and subsequently repackage it. Salt procured in bulk is often non-iodized, but the wholesalers and retailers are not able to recognize it. Also, there is currently no mechanism in place to ensure stable pricing for potassium iodate or to ensure its quality.

*Strengthening the monitoring system*

Monitoring at the production level is a crucial component of the salt iodization program. Yet, the medium and small producers carry out limited and poor quality internal monitoring. External monitoring at the production level is done by the Salt Department but is restricted to major salt producers. In addition, many small producers and traders are not registered with the Salt Department. In terms of the regulatory monitoring, the Food Safety Officers collect samples of iodized salt from the production plants, as well as at the wholesale and retail levels, and send them for testing. But, guidelines are relatively weak and not properly implemented. With regards to tracking progress towards the elimination of IDD, India is one of the few countries with no national or

subnational data on the iodine status of the population available on a regular basis. Iodine deficiency indicators such as UIC and goiter prevalence are rarely included in national health surveys.



**Salt vendors in Rajasthan**

*Maintaining continuous advocacy, education and communication*

Communication and advocacy efforts have mainly targeted three audience segments; influencers of the USI policy, producers and suppliers of iodized salt and consumers. Advocacy has focused on generating political commitment for the program by informing the politicians and policymakers about the serious implications of IDD on mental health and the benefits of iodized salt. Public education and intensive social mobilization activities have been conducted through various channels including print media, television and radio and inter-personal communication to create consumer demand for adequately iodized salt. School-based sensitization programs are on going. However, the public awareness of IDD and its serious consequences remains low and there is a lack

of consumer demand for adequately iodized salt. Most importantly, consumers are unable to assess the quality of the salt they purchase, making them unable to demand only adequately iodized salt.

**Future agenda**

As the political and administrative leadership in the country continues to change, sustained advocacy at the national, state, and district level is required to ensure higher political commitment and prioritization of the USI program. Equally important to continuing the central ban on the sale of non-iodized salt for edible purpose is the establishment of an effective mechanism to ensure proper enforcement of both the national and state legal measures