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Redesigning the Indian Food Security System through E-Governance: The Case of Kerala

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Summary. — The link between e-governance and development has been widely leveraged for policy formulation in India, however, little is known about its application to food security. This paper fills the gap with a study of Kerala, where the Public Distribution System (PDS), the main national food security program, has been digitalized in its main functions. Findings reveal that the digital program has been purposefully devised to combat the problem of diversion ("rice mafia") of PDS goods to the market: however, issues of partial coverage and mistargeting remain. Lessons are drawn for other states computerizing the PDS and their social safety nets.

Key words — Asia, India, Kerala, PDS, food security, e-governance

1. INTRODUCTION

Over the last decades, a rich body of literature has been built on the link between e-governance and development. At the theoretical level, information and communication technologies (ICTs) are viewed as carriers of efficiency and accountability, so that e-governance has come to be seen as "the digital route to good governance" (Heeks, 2001). The use of new technologies enables removal of discretional power from street-level bureaucrats (Bovens & Zouridis, 2002), resulting in higher transparency of administrative processes (Elbahnasawy, 2014): these considerations have been widely accepted in India, where the National E-Government Plan provides directives to improve governance through ICTs. Recently, new technologies have been highly used by Indian local governments, in order to improve their services to citizens (Bhatnagar, 2004; Kuriyan & Ray, 2009; Madon, 2009), optimize rural development mechanisms (Kaushik & Singh, 2004), and increase effectiveness of the social safety nets through which the country's poor are taken care of (Bussell, 2012; Pritchard, Rammohan, Sekher, Parasuraman, & Choithani, 2013).

The theme of e-governance usage in social safety nets is to be observed, in contemporary India, with particular reference to the food security system, which is a central domain of the nation's anti-poverty strategy. India, notwithstanding an economic growth that has resulted in poverty reduction over time, [1] is still facing a serious problem of widespread malnutrition: in spite of the redistributive food policies undertaken through the years, 40% of women and children are still undernourished (Sen & Himanshu, 2011), and the nation ranks 105 out of 120 in the Global Hunger Index developed by IFPRI for 2013. [2] The fact that malnutrition perpetuates the vicious circle of poverty is well-established in the literature (Scanlan, 2004; Pathak & Singh, 2011), and ensuring food access to the poor remains a priority for India today: the main mechanism for facing the problem is the Public Distribution System (PDS), a food security program that allows purchasing first-necessity goods at subsidized prices. Recently reformed by the National Food Security Act (NFSA) passed by the Lok Sabha on August 26, 2013, the program has been long based on food subsidies targeted to households living below state-specific poverty lines.

The PDS is the biggest food subsidy system in India today. [3] It is, for how it has been constructed, the main national program to improve nutrition for the poor: the use of digital technologies in this scheme is therefore extremely relevant, as it relates e-governance to the most important mechanism of food security in the nation. Implementation of ICT-based solutions in the PDS is a responsibility of the state governments, and it is therefore important, to extract useful lessons at the all-India level, to examine the experiences of those states that have first engaged in this. Kerala has been one of the pioneers in this process, starting as early as 2001 with digitization of PDS user data. This paper, based on an in-depth case study of the Kerala PDS, focuses on how e-governance adoption, rather than just enhancing the effectiveness of existing processes, enables deep anti-leakage transformations in the very nature of the food security system.

The paper, in this respect, plays both a descriptive and a normative function. From a descriptive point of view, I find that technology has been designed, and enacted in specific ways, *in order* to embody the state government's fight against the phenomenon (known as "rice mafia") due to which PDS commodities are diverted to the market for profit. By doing so, technology does not simply improve existing food security mechanisms, as standard programs of end-to-end computerization would do: rather, in the case of Kerala, it introduces new means to detect and prevent leakage, and is therefore instrumental in reconstructing the system through a novel accountability structure.

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And still, I find that this process does not happen without problems. In the newly computerized PDS, one phase of the supply chain (constituted by sales of goods by fair-price vendors, known as ration dealers) is monitored more strongly than the previous ones: this lowers the potential of systems' transformation, as it limits the scope of ICT-based monitoring. Furthermore, the root cause of diversion, identified with the perverse consequences of a shift to a targeted PDS, has remained unchanged in spite of digital transformation. From a normative point of view, I draw key lessons from the case of Kerala: these are in terms of seeking holistic monitoring across program's phases, and designing ICT-based interventions to target the root causes of problems (in this case, leakage from the PDS) rather than just their tangible effects.

The paper is organized as follows. Section 2 describes the Indian food security system, with a focus on the two main problems (exclusion errors and diversion to the market) that affect it, and provides a rationale to study the efforts toward computerization at the state level. Section 3 focuses on the case of Kerala, observing that e-governance has been introduced through digitalization of the main existing functions of the PDS. Section 4 observes that implementation goes beyond this, and takes the role of a direct mechanism to combat the diversion of PDS commodities: however, Section 5 observes the issues emerging in this process, as technology, focusing on the final levels of the supply chain, targets the effects of the rice mafia, but not the root cause behind it. Section 6 concludes, with lessons for the other Indian states undertaking the same process.

2. THE INDIAN PUBLIC DISTRIBUTION SYSTEM

Since national independence, social safety nets have played a major role in India's development strategy. As observed by Corbridge and Harriss (2000), high reliance on anti-poverty schemes reflects J. Nehru's vision of independent India, which conceived protection of the poor as an integral part of development: this was structured, throughout national history, in the form of multiple interventions in favor of the poor and vulnerable. Social safety schemes, devised through the Central Government and implemented at the state level, are therefore at the core of India's development model. Food security, and the social schemes designed in order to ensure it, constitute one of the main dimensions of the vision of development implicit in this.

The first food security mechanisms in India were devised in pre-independence times. Before 1939, when rationing was introduced in Bombay as an emergency measure, colonial India lacked a regional food policy: dependence on foreign imports of foodgrains was high, and entitlement failures, combined with food deficits, caused between 1.5 and 3 million casualties in the 1942–43 Bengali famine alone (Mooij, 1998, pp. 79–81). In this situation, a food department was created, to make purchases of foodgrains from private producers in surplus provinces, and allocate these to deficit provinces, where they would be sold at below market prices. This structure, initially conceived as an emergency measure, was maintained as India became independent, even though the first years were characterized by an inconsistent food policy (Mooij, 1998, pp. 81–82).

In 1965, the food security system formally took the shape of the PDS, with the creation of the Food Corporation of India (FCI). The FCI is the organization responsible for making the PDS work: it purchases food commodities (primarily rice, wheat, and sugar) and non-food items (mainly oil, kerosene, and cloth) from private producers, and distributes them at subsidized rates through a network of fair-price shops (FPS), also known as ration shops, throughout the nation. The establishment of the FCI was the key measure in institutionalizing the PDS as the main food security mechanism in India: in its initial formulation, the PDS was universal, in the sense that all beneficiaries were entitled to equal subsidies. From 1965 to 1990, the amount of foodgrains dealt with by the FCI increased from 10 to more than 18 million tonnes, and the number of ration shops grew to over 350,000 (Mooij, 1998, p. 86): the expansion of the system enhanced its presence on the territory, improving poorer people's capabilities to "see the state" in their daily lives (Corbridge, Williams, Srivastava, & Véron, 2005).

Figure 1 provides a diagrammatic representation of the PDS supply chain. This is articulated along three phases: first, the commodities procured by the FCI and private producers, collected in storing spaces referred to as suppliers' godowns, are redistributed through wholesale points—Authorized Wholesale Dealers (AWDs)—throughout the nation. Second, commodities stored in AWDs are lifted by Authorized Retail Dealers (ARDs), the owners of the fair-price shops to whom goods are allocated on the basis of theoretical requirement—namely, of the number of households registered with each of them.[4] Third, beneficiaries lift PDS goods from ration shops: each beneficiary household is entitled to a monthly quota, which can be collected at subsidized prices once the ration

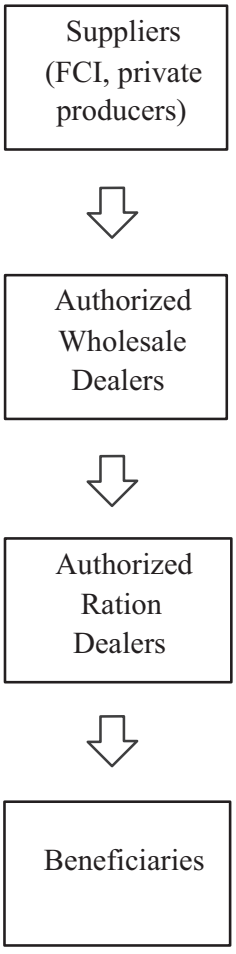

Figure 1. *PDS supply chain.*