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Understanding District Ecosystems: Implementation of Food, Agriculture and Nutrition Policies in Sabarkantha and Bijapur Districts (India)

Lina Sonne, Anar Bhatt & Anjali Neelakantan,
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About this paper

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About LANSA

Leveraging Agriculture for Nutrition in South Asia (LANSA) is an international research partnership. LANSA is finding out how agriculture and agri-food systems can be better designed to advance nutrition. LANSA is focused on policies, interventions and strategies that can improve the nutritional status of women and children in South Asia. LANSA is funded by UK aid from the UK government. The views expressed do not necessarily reflect the UK Government's official policies. For more information see www.lansasouthasia.org

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Abstract

Nutrition policies are shaped at a national and state level in India; however programmes are implemented by the district administration. This paper considers the implementation of nutrition programmes in two districts — Sabarkantha in Gujarat and Bijapur in Karnataka — drawing on a systems approach to (i) detail how policies and programmes related to nutrition are implemented through the district ecosystem; (ii) whether programmes are integrated and complementary, both within the state machine as well as with non-state programmes; and (iii) what the roles of state and non-state actors are in implementation.

1. Introduction

There are a number of factors that constitute intertwined pathways for improving the nutritional status of an individual, such as 1) food production (agriculture); 2) food access and food security; 3) health, water, sanitation and hygiene standards; and 4) women's empowerment and ability to make choices with respect to nutrition.[1]

These pathways, the policies that affect them, and the multiple government and non-governmental stakeholders associated with programme implementation aimed at improved nutritional outcomes can be said to form an ecosystem. Adopting an ecosystem approach to nutrition allows us to study policy implementation within the multiple interlinked pathways to nutrition and the different state and non-state actors associated with programme implementation and other activities to improve nutritional outcomes of households. It also allows us to study the dynamics of the ecosystem, and identify potential overlaps or gaps.

Given that implementation of nutrition-relevant programmes takes place at the district level, this paper considers district-level ecosystems. As such, the paper reviews the district-level ecosystem for implementing programmes associated with pathways to improved nutritional outcomes across two districts — Sabarkantha in Gujarat and Bijapur[2] in Karnataka. In doing so, the paper evaluates policy implementation in a complex sector where integration is especially important, given the multiple and interacting pathways for supporting improved nutrition. This includes considering nutrition specific programmes, together with the underlying pathways highlighted previously — food production and agriculture; food access and food security; health, water, sanitation and hygiene; and women's empowerment.[3]

The broad research question is: What is the role of the state and non-state actors in implementing nutrition-related policies and programmes at the district level? And do state and non-state interventions tend to show complimentarily and / or be integrated?

[1] Literature on factors and pathways include: SPRING (2014); Verhart (2016); Lancet (2013); Kadiyala et al. (2014).
[2] The district and its namesake headquarters also goes by the name of Vijayapura. However, while the government uses this name for official purposes, every stakeholder we spoke to used Bijapur, which is why this is used throughout the paper.
[3] The choice to consider these four pathways stems from the overall research project of which this paper forms part, which focuses on pathways to nutrition with relevance to women and gender.

The paper contributes to the literature on policy implementation in India by applying frameworks that have been used in other sectors (e.g., education and health) to understand implementation of relatively complex sets of programmes affecting the underlying factors of nutrition.

To address the question of how policies and programmes related to nutrition are implemented through the district ecosystem, the next section of this paper reviews literature on nutrition policy and India's policy structure and implementation ability with respect to nutrition. That is followed by an outline of the methodology, before two detailed case studies of two district ecosystems: Sabarkantha in Gujarat and Bijapur in Karnataka. Lastly, we discuss differences and similarities between the cases before concluding the paper.

2. Background and Literature

Nutrition is affected by access to, and availability of, food, health and care (SPRING 2014; Verhart 2016; Lancet 2013). Since the primary caregivers are women and their agency positively affects the nutritional choices of the household (Verhart 2016), we consider female agency and empowerment as a fourth factor in this study.[4] In rural areas, agriculture is especially important as a major source of livelihoods and employment as well as a source of food (Kadiyala et al. 2014). Each of these factors constitute different pathways through which nutritional status is affected, broadly by either increasing access (to health facilities, clean water or healthy food) or changing behaviour (e.g., improved sanitation and hygiene practices, changed care practices). The different pathways may have policies associated with them.

However, while there are multiple pathways to improved nutritional status, and "the need for inter-sectoral governance for nutrition is now broadly recognised" (IFPRI 2016:44), nutrition policy in India remains primarily focused on health interventions.

2.1 India's nutrition policy and implementation

Policy frameworks can broadly be divided into 1) creating effective and implementable policies and 2) effective implementation of those policies.

2.1.1 Nutrition policies

The capacity of the Indian state to create good policies is largely recognised (Pritchett 2009; Saxena 2005; Dev 2012). However, while "the need for intersectoral governance for nutrition is now broadly recognised" (IFPRI 2016:44), nutrition policy in India remains primarily focused on health interventions, as well as being sectoral, with limited cross-sectoral initiatives or coordination among overlapping initiatives. Agriculture policy, in particular, is not integrated with nutrition policies (although it is related to food security) (Dev 2012). The first challenge, then, is that policies are not formulated in a way that addresses the multiple and interconnected pathways of nutrition adequately.

[4] While female agency and empowerment can be considered a part of each of food access, health and care, we choose to treat it as a separate factor to draw out the limited agency women often have while at the same time being the primary caregivers.

Since nutrition cuts across different sectors, the responsibility for better nutritional outcomes is spread between different government Ministries and Departments. At the national and state level, the Ministries involved are the Ministry of Human Resource Development, Ministry of Health and Family Welfare, Ministry of Agriculture and Farmers Welfare, Ministry of Water and Sanitation, and the Ministry of Women and Child Development. The Government of India recognises that nutrition is a multi-sectoral issue, and has asked for the setting up of an inter-ministerial coordination committee in order to ensure that there are multiple sectoral representations (MHRD 1993).[5] Likewise, State Nutrition Missions have been adopted by a few states, including Gujarat, Uttar Pradesh, Maharashtra, Odisha and Karnataka, to increase inter-sectoral coordination in order to improve child nutrition. However, only two states, Uttar Pradesh and Odisha, have specified measurable targets and time frames for nutrition-related indicators (Express News Service 2016).[6]

Food- and nutrition-related government programmes and schemes that are being implemented in India include the Midday Meal Scheme (MDM), the Antyodana Anna Yojana (AAY), the Integrated Child Development Services (ICDS) and the Targeted Public Distribution System (TPDS). Additionally, the National Rural Health Mission, Gender Budget and National Rural Employment Guarantee Act (NREGA) were all introduced in the Budget in 2005 (Sharma 2014).[7] While food programmes aim to improve the nutritional status of households and communities, the 2005 schemes and initiatives seek to supplement earlier efforts with better health, improved rural employment and the introduction of a gender perspective in policy formulation and implementation. The National Food Security Act 2013, now comprising all the food-related government schemes (MDM, TPDS and ICDS), was enacted to provide subsidised foodgrains to two-thirds of the country's population. However, many states have yet to implement the Act (Hasan 2016).[8]

In Gujarat and Karnataka, the Gujarat Agriculture and Cooperation Department and the Karnataka State Department of Agriculture are in charge of implementing the centrally- sponsored schemes, missions and programmes related to agriculture in their states. The Departments are also responsible for allocating funds as per the state's share in these agriculture programmes and devising their own schemes and programmes in addition to the ones formulated by the Centre. Unlike Karnataka, Gujarat does not have a stand-alone policy for the agriculture sector, but it has integrated inter-sectoral policies that aim to promote industries, organic farming and modernisation of agriculture.

2.1.2 Implementation of nutrition policies

The second challenge is that of implementation: "the capability of the Indian state to implement programs and policies is weak—and in many domains, it is not obvious it is improving. In police, tax collection, education, health, power, water supply—in nearly every routine service—there is rampant absenteeism, indifference, incompetence, and corruption" (Pritchett 2009:3). While policies may be well formulated, India's civil service struggles to implement programmes and schemes

[5] http://wcd.nic.in/sites/default/files/nnp_0.pdf
[6] http://indianexpress.com/article/india/india-news-india/global-nutrition-report-2016-over-1-45-lakh-kids-suffer-from-severe-acute-malnutrition-2859996/
[7] http://www.ibtimes.co.in/indian-budget-brief-history-603042
[8] http://www.dnaindia.com/analysis/column-let-them-eat-slogans-2218499 [Accessed 21 June 2016]

efficiently and the government is often unable to hold actors — contractors or others carrying out work and services — accountable (Pritchett 2009; Saxena 2005).

The district- and village-level local bodies play a crucial role in the successful implementation of nutrition policies (Vepa et al. 2016). Each state in India has its own legal framework to guide local governance. The State Legislature grants the panchayats with powers required to function as self-governance institutions. The *Zilla Parishad* or the District Council is the layer between the state and the local bodies comprising Blocks (*taluka*/*tehsil*).

The challenge at the district level is then the capacity to implement schemes, programmes and services effectively and to a high standard; this is often undermined by corruption, rent-seeking for private ends, absenteeism and patronage by local powerful interests (e.g., politicians or large landowners) (Saxena 2005). The poor quality of services and absenteeism by those employed to undertake the work, together with limited information about services and schemes, often results in limited demand for such services as in the case of local public healthcare (Pritchett 2009; Banerjee et al. 2007). Instead, people may turn to alternative private service providers (e.g., private healthcare facilities) or programmes run by NGOs. Additionally, the fact that the senior officers in charge of a district are transferred frequently means that there is limited continuity in implementation, especially of local initiatives (Pritchett 2009). Therefore, even with the best intentions from senior officers at the district, implementation can still fail at the panchayat and village level if interests and incentives are not aligned. For example, zilla panchayats and panchayats may use and share devolved funds in ways not intended due to local pressure of preferences of those in charge at that level (Saxena 2005).

NGOs play key roles in the implementation of nutrition-related programmes and schemes at the district and block levels, especially where the government fails to provide adequate services (Pritchett 2009; Banerjee et al. 2007). For example, NGOs are engaged in agriculture programmes like dissemination of information to farmers and provision of free medical care to cattle, health programmes like health check-up camps and provision of drinking water, as well as some community development projects (Ramakrishna 2013). Apart from implementing programmes on their own, NGOs also partner with the government to ensure greater coverage and outreach of government programmes, such as MDM.

2.2 District ecosystems for nutrition

The review of literature suggests that nutrition has multiple pathways associated with it, and efficient policies need to target such a spectrum through a multi-sectoral approach. However, even if policies are well formulated, the key challenge is in implementation. Here, a range of issues such as corruption and diverting funds for private interest, absenteeism, and a lack of proper implementation results in programmes and services not reaching those they should benefit. Instead, many turn to alternative programmes by NGOs or services by the private sector, such as in healthcare and education.

At the district level, an ecosystem is set up by the different policies and programmes, their implementation, and the governmental and non-governmental actors associated with those programmes and pathways; depending on how well it operates, such an ecosystem results in

improved nutritional outcomes of varying degrees. The functioning of the district ecosystem depends on how well policies enable it to, to what extent and how non-state actors from the private sector and civil society are able to work together within the government and in the ecosystem to implement programmes, and the local socio-economic context of the ecosystem.

3. Methodology

This paper has used secondary data and statistics, as well as primary research (including semi-structured interviews with stakeholders from across the district ecosystem) and consultative workshops.[9] We undertook the research on district ecosystems in Sabarkantha district in Gujarat and Bijapur district in Karnataka.

3.1 Research methods

The paper details two district level ecosystems, reviewing how policies and programmes related to nutrition are implemented through the district ecosystem; whether policies are integrated and complementary; and whether state and non-state actors are involved in the implementation process. We take a systems perspective, which entails mapping the different policies implemented in each district, the district administration organisation, and the actors associated with programme implementation.

We collected available secondary data on states, districts and villages, drawing heavily from secondary data such as the Census 2001 and 2011, district statistics collected and disseminated by the zilla panchayat, and relevant journal articles and papers that had data on the districts and the villages under consideration.

Semi-structured stakeholder interviews covering individuals and organisations that constitute a part of the larger nutrition ecosystem in the two districts were the main data collection tool. The stakeholders were representative of relevant government departments at the state, district and village levels; NGOs, private sector representatives, academia; schools implementing MDM, APMC (Agricultural Produce Market Committee) market yards, anganwadi centres, and primary health centres. Interviews were mainly held in English in Karnataka, as well as in Kannada with the help of a translator. In Gujarat, the interviews were held in Gujarati (one Okapi team member who speaks Gujarati undertook the interviews). Interviews were recorded (with permission) and transcribed. In addition, notes were taken. During November-December 2015, a round of initial informant interviews were conducted with a select group of academics and key practitioners in Gujarat (5) and Karnataka (3). Based on the initial informant interviews, the list was modified to prioritise the most important and relevant stakeholders. Researchers additionally used snowball sampling involving additional stakeholders proposed by interviewees. Thirty-five stakeholders in Gujarat and 25 in Karnataka were contacted for interviews. Finally, 22 in Gujarat and 13 in Karnataka were interviewed. Additionally, the researchers attended the District Officers Retreat in Sabarkantha.

[9] This paper is part of a research project that used a mixed methods approach to data collection, including secondary data and statistics, and primary research such as a survey of 100 women, semi-structured interviews with stakeholders, and consultative workshops.

During visits to Gujarat and Karnataka towards the end of 2015, local partners were identified to help set up interviews in the districts. These were the Indian Academy for Self-Employed Women (an affiliate of SEWA) in Gujarat and Bijapur Integrated Rural Development Services (BIRDS) in Karnataka.

A two-hour consultative workshop with representatives from the local government, civil society, village-level panchayats and the local partner organisations was held towards the end of the project. The workshops had 15-20 participants and sought to gain comments on preliminary district-level results which were presented.

Stakeholder interviews were taped and typed up, and if necessary, translated into English, then coded for similarities and differences. Based on interview notes, a priori themes were noted across different domains and information was then tabulated from different stakeholder interviews. At the workshops, a designated person took notes. An internal workshop was held to review materials and brainstorm the structure and content of the final working papers. A case study approach has been adopted as it provides an in-depth and multi-faceted understanding of the issue at hand and explains the causal pathways resulting from a new policy initiative (Crowe et al 2011).

3.2 State, district and village selection[10]

We selected states, districts and villages in order to show some variety in geographical regions as well as prosperity, while ensuring data from the two districts could be compared meaningfully. We used secondary data together with preliminary interviews to shortlist districts.

Karnataka in the south and Gujarat in west India allows us to cover two geographic areas, and both states have enacted state policies relevant for nutrition, while maintaining a problem with malnutrition among the population. Additionally, we drew on a policy landscaping paper by LANSA[11] that suggested that Gujarat and Andhra Pradesh had strong institutional environment for agriculture and nutrition compared to other states. Given that Andhra Pradesh has gone through political and border changes, Karnataka with a similar strong policy framework seemed a better choice.

We chose districts after preliminary interviews with stakeholders at the state level. Sabarkantha in Gujarat was chosen because it has a large range of incomes within the district, and while being located close to the state capital, has villages some with good and some others with poor access to roads and facilities. Bijapur district is on the border between Karnataka and Maharashtra and has access and good connectivity to larger cities for markets (though at a greater distance than Sabarkantha). However, within the district, there are marked differences between better-off villages and poorer villages. Both districts have problems with malnutrition.

The next two sections provide two case studies — one on Bijapur district in Karnataka and the other on Sabarkantha district in Gujarat. Each case study starts by providing a socio-economic background of the district before discussing the organisation of the district administration. It then goes on to detail implementation of nutrition policies and programmes by the local government,

[10] For more information and further data on the districts, please see **Appendix**.
[11] The following paper: Country Policy Landscape Analysis: a brief review of the agriculture/nutrition policy landscape in India (April, 2014)

before considering government programmes in related areas including food production, food security and availability, health, water and sanitation, and women's empowerment. Lastly, the case study considers the role of non-state actors in enabling improved nutritional outcomes, before discussing the overall district ecosystem.

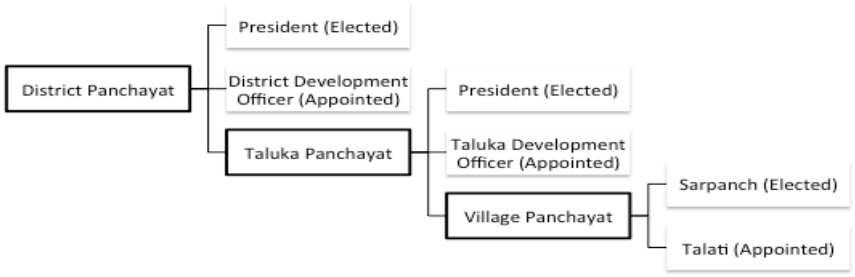
4. Case Study 1: Sabarkantha

The case study begins with an overview of the district and local governance structure before reviewing programme implementation by the local government in the nutrition sector as well as in those with relevance for nutrition (including agriculture; food access and security; health, water, sanitation and hygiene; and women's empowerment). That is followed by a section on the role of non-state actors, before a discussion on nutrition policy and implementation within the district ecosystem.

Situated in the north of Gujarat, Sabarkantha district is spread across 7,390 square km, constituting about 4 per cent of the state's geographic area. The district's headquarters is Himmatnagar. It has 13 talukas[12] (of which four fall under the Tribal Development Programme), 318 panchayat kendras and 736 gram panchayats.[13] Sabarkantha has eight nagar palikas and is close to Ahmedabad, Gujarat's largest city, and Gandhinagar, the state capital.[14]

The district panchayat is headed by its elected President, as well as the appointed District Development Officer (DDO). At the taluka level, taluka panchayats have an elected President and an appointed Taluka Development Officer (TDO) who is in charge of administering development work at the block level (Census 2011).

Figure 1: District Administration Organisation



At the village level, the elected Sarpanch and the appointed Talati have similar roles.[15] The Government of Gujarat has established 11 main departments[16] that function across all levels of

[12] Himmatnagar, Prantij, Idar, Khedbrahma, Vijaynagar, Bhiloda, Meghraj, Modassa, Maalpur, Bayad, Vadali, Talod, and Dhansura
[13] https://sabarkanthadp.gujarat.gov.in/sabarkantha/Images/vva-2012-original.pdf
[14] For more district data, see **Appendix**
[15] Likewise, an elected President heads the Municipality and the Chief Officer works as the Secretary of the Municipality, who looks after the day-to-day work. In case of the large cities, the State Government has constituted Municipal Corporations, which are headed by an elected Mayor and the Municipal Commissioner, appointed by the Government, looks after the routine work.
[16] Education; Agriculture and Research; Animal Husbandry and Poultry; Forest and Environment; Roads and Buildings, Bridges; Cooperation and Cooperative Societies; Industries (Small, Large and Cottage); Health and Medical Services, Medical Education and Research, Family Welfare and Nutrition; Information; Irrigation; Social Welfare and Social Defence.

governance; within this structure, nutrition sits firmly in the Department for Health and Family Welfare. (Census 2011).[17]

Sabarkantha has a number of on-going research projects owing to its proximity to Ahmedabad- and Gandhinagar-based institutions, such as the Indian Institute for Public Health and Gujarat Institute of Development Research. Moreover, the district administration, led by the DDO, is proactive, and open to new ideas and working with the private sector, particularly in the use of technology to improve governance. For example, the Digital Setu Project provides high-speed broadband connections to villages through village *kitley*s, or cyber cafes. The district administration is working towards automating its health scheme reporting by giving handheld devices to its frontline workers. Lastly, Sabarkantha has signed a Twin District agreement with the Ahmedabad District Panchayat to exchange ideas and collaborate on pilot projects. [18,19]

4.1 Implementation of nutrition programmes

In Sabarkantha, nutrition-related programmes fall under the Department of Health and Family Welfare and the Department of Women and Child Development, and focus primarily on children and pregnant or lactating mothers. The Chief District Health Officer oversees the implementation of all nutrition programmes. A majority of these schemes are delivered through frontline workers such as Accredited Social Health Activists (ASHA) of Primary Health Centres (PHCs) and the staff of anganwadi centres.

Most nutrition-specific programmes implemented in the district are part of ICDS and aim to reduce nutritional deficiencies. Beneficiaries include pregnant and lactating mothers, children (0-6 years) and adolescent girls. The ICDS programme officer ensures the delivery of projects through appointed staff at the taluka and village levels.[20] Further, the State Nutrition Cell under the National Health Mission has introduced schemes for the same target group, such as MAMTA Abhiyan and Kasturba Poshan Sahay Yojana that are implemented in the district.[21]

The MAMTA Abhiyan scheme includes initiatives to eradicate micronutrient deficiencies among women, adolescents and children through programmes that provide iron folic and vitamin A supplements.[22] The scheme also requires village PHCs to observe Mamta Divas (Motherhood Day) on one Wednesday every month. On such Wednesdays, the PHCs distribute iron folic tablets, check the weights of mothers and newborns, and test for haemoglobin deficiencies.[23]

The Kasturba Poshan Sahay Yojana (Kasturba Nutrition Assistance Scheme) is a conditional cash transfer scheme to reduce malnutrition- and anaemia-related morbidity and mortality among mothers from families falling below the poverty line (BPL). Pregnant women receive cash amounts,

[17] http://www.censusindia.gov.in/2011census/dchb/2405_PART_B_DCHB_SABAR%20KANTHA.pdf
[18] http://www.panchayat.gov.in/documents/10198/333815/Digital%20Setu_Sabarkantha_10102015.pdf
[19] Interview with District Official, Sabarkantha
[20] https://sabarkanthadp.gujarat.gov.in/sabarkantha/english/shakhao/i-c-d-s-branch/Integrated%20Child%20Devp.%20Scheme.htm
[21] https://nrhm.gujarat.gov.in/nutrition.htm
[22] Examples: Anemia Control Programme (ACP), State Nutrition Iron Plus Programme (SNIPP), and National Iodine Deficiency Disorder Control Programme (NIDDCP)
[23] Interview, Female Health Worker (ANM), PHC, Sabarkantha

ranging from INR 1,400 to INR 2,100, in instalments per trimester upon completion of the prescribed immunisation and nutritional supplements.[24]

The district has set up child development and nutrition centres to rehabilitate severely malnourished children. Each centre provides intensive care and food for children for 22 days, and counselling to parents.[25] The anganwadi centre in the district has 2-3 workers and one supervisor who report to the taluka ICDS office. Each centre has a book to record the height and weight of girls and boys every month. Those who have relatively lower weight and height are monitored more frequently. The anganwadi workers counsel mothers to modify their eating habits and encourage better nutrition at home. [26]

Sabarkantha is one of the 12 districts selected by the state government to implement the intensive nutrition programme in all of its anganwadi centres (Ajay 2014).[27] The district implemented the first phase of this programme, called Mission Balam Sukham, which involved screening and monitoring children less than six years of age, and providing nutritious food throughout the day.[28]

The district panchayat has recently partnered with UNICEF to implement a similar initiative, which involves tracking children's weight between 0-5 years of age at anganwadi centres. For two months, they also provide food at home to underweight children from birth to five years of age. The district administration also organised counselling sessions for parents, as well as supplements and nutritious food for children to take home.[29] While implementing these programmes, district officials recognise the influence of mothers-in-law in household decision-making, particularly with regard to nutritious food. As a result, officials have started counselling mothers-in-law on how to improve nutrition awareness within Sabarkantha's families to make their interventions more effective.[30]

4.2 Programmes and activities in sectors related to nutrition

Below we review programme implementation and other activities in sectors related to nutrition that go beyond the nutrition programmes detailed in section 4.1.

4.2.1 Food production: Agriculture

The Agriculture and Research, and the Animal Husbandry Departments implement state- and centrally-sponsored schemes and projects, with a division between animal husbandry and agriculture.[31],[32] Farmers in Sabarkantha primarily grow cash crops. The government buys crops at a

[24] Interview, Female Health Worker (ANM), PHC, Sabarkantha
[25] Household Focus Group Discussion at Ranchhodpura village
[26] Interview, Sonasan Anganwadi worker
[27] News report: http://indianexpress.com/article/cities/ahmedabad/anandibens-push-to-end-malnutrition-spurs-month-long-intensive-nutrition-drive/
[28] Under the State Nutrition Cell, National Health Mission
[29] Input from Stakeholder Workshop in Himmatnagar
[30] Input from Stakeholder Workshop in Himmatnagar
[31] Senior Official, Agriculture Department, District Panchayat
[32] The District Agriculture Officer (DAO) oversees the sale and marketing of agricultural produce including crops and vegetables. Deputy Directors of Agriculture for Training and Extension, and their subordinate officials administer extension services to farmers. The Deputy Director of Animal Husbandry is in charge of administering schemes concerning animals and poultry farms (source: http://www.censusindia.gov.in/2011census/dchb/2405_PART_B_DCHB_SABAR%20KANTHA.pdf).

fixed government rate through the minimum support price (MSP) scheme.[33] There are no schemes that incentivise farmers to grow food crops over cash crops.

The Animal Husbandry Department recognises that the local cow population is decreasing and is therefore providing INR 3,000 in cash subsidy to rear local breeds.[34] The department is currently implementing the state government's Gauchar Vikas Scheme (Cow Rearing Development Scheme, which provides assistance of up to INR 1,000,000), as well as the Women Cattle Rearer's scheme to support women within animal husbandry activities,[35] which also helps creation of livelihoods.

Box 1- Increasing Employment in Agriculture through MGNREGA in Sabarkantha

The Department of Rural Development in Sabarkantha is responsible for implementing MGNREGA. The work allotted under the scheme should be related to agriculture, check dam, well construction, plantation, irrigation, road works, drinking water, anganwadi and rural development. However, a representative of the panchayat noted the need to simplify the process of disbursing money as payments to those given employment is often delayed.

(Source: interview with district official and panchayat representative)

Sabarkantha produces 2.4 million litres of milk per day, which is more than the processing capacity of a local dairy. As a result, the district administration is setting up bulk milk coolers near collection centres. The district also organises a milk producing competition with a cash prize of up to INR 25,000.[36] However, these initiatives are not linked to nutrition policy in the district.

Last year, Gujarat became the ninth Indian state to announce an organic farming policy. At the time of fieldwork, the state government was planning to set up a cell under the Department of Agriculture to encourage chemical-free farming, and assist farmers with certification, marketing and brand-building.[37] However, interest has been limited as locally the market for organic produce is small, and farmers are required to have formal certification from the government to market their produce as organic, which is difficult to organise.[38] Nevertheless, organic farming is commonly cited as the healthy agricultural option among district stakeholders.[39]

4.2.2 Food access and security

The Department of Food and Public Distribution ensures food security at the household level. However, it operates separately from the Department of Agriculture discussed above. Likewise, it functions separately from Departments that implement schemes to improve food and nutritional security of children and adolescents, such as MDM, which is implemented through primary schools

[33] http://www.farmer.gov.in/mspstatements.html
[34] Senior Official, Animal Husbandry Department, during Officers Retreat
[35] Senior Official, Animal Husbandry Department, during Officers Retreat
[36] Senior Official, Animal Husbandry Department, Officers Retreat
[37] https://www.agri.gujarat.gov.in/Portal/News/301_1_Organic-Farming-Policy.pdf
[38] Organic Farmer, Sabarkantha District.
[39] Stakehodler interviews, Sabarkantha District.

and anganwadi centres (mainly through the Ministry of Human Resource Development).[40] In Sabarkantha, grains are distributed through ration shops, which are monitored by the District Supply Officer of the district panchayat.[41]

However, there is no specific policy or programmatic link between food access and nutritious food. For example, district stakeholders noted that the food security programme ought to include vegetables and pulses in addition to foodgrains, and that there is need to include fresh, locally-made food, as opposed to processed, packaged food.[42]

Sabarkantha's Midday Meal Scheme is implemented and monitored by the District Collector's office, and provides free lunch to primary and upper primary students of government-run, -granted and local-body schools. The menu is the same across the state (Paltasingh 2012).[43] During lunchtime, teachers take turns to oversee the meal served every day to enforce the prescribed quality and hygiene norms.[44] However, the representative of one school highlighted the lack of protein in the food, since there is a relatively small quantity of pulses in the meals.[45] Anganwadi centres also provide cooked meals, and their menu is decided locally by the taluka office.[46]

The district panchayat started an initiative in primary schools to grow vegetables and herbs in kitchen gardens, to create awareness about the nutritional and medicinal values of plants and also to ensure diversity in children's diets.[47] However, this scheme has seen limited success. For example, a primary school in Ranchhodpura village started a kitchen garden: vegetables were grown, but none of the staff had a clearly defined responsibility to run it. The schools do not conduct any awareness camps for nutrition but do show the students educational movies.[48]

4.2.3 Health, water, sanitation and hygiene

This section covers health policies other than nutrition policies, together with water, sanitation and hygiene.

Health

The Health Branch of Sabarkantha district panchayat, led by the Chief District Health Officer (CDHO), maintains 61 public health centres, six government dispensaries, and six mobile health centres.[49][50] Through these centres and units, the CDHO supervises close to 22 different state-sponsored health programmes and family welfare activities.[51]

[40] There are 2,458 primary schools and 3,263 Anganwadis in Sabarkantha that provide food to children (Directorate of Economics & Statistics, 2015).
[41] https://www.dcs-dof.gujarat.gov.in/ration-card.htm
[42] Interviews: members of Chetna and SEWA
[43] http://mdm.nic.in/Files/MI%20Reports/MI_Reports_3HYL_2012/Gujarat/Gujarat-SPISER.pdf
[44] The schools have a system where any two teacher eat the MDM lunch everyday with the children to ensure there is no adulteration
[45] School Teacher, Primary School Ranchhodpura
[46] Sonasan Anganwadi worker
[47] Stakeholders Workshop, Himmatnagar
[48] School Teacher, Primary School Ranchhodpura
[49] https://sabarkanthadp.gujarat.gov.in/sabarkantha/english/shakhao/health-branch/Introduction.htm
[50] The district administration runs both allopathic and Ayurvedic clinics and dispensaries, in accordance with the State Health Department. The District Ayurvedic Officer supervises the Ayurvedic dispensaries and hospitals across the district (Census, 2011).
[51] Stakeholder Workshop, Himmatnagar

Primary Health Centres employ ASHA workers, with a female health worker (FHW) heading the Centre. They serve pregnant women, lactating mothers, and children up to six years of age. They counsel pregnant women on food habits, and monitor mothers' weight, height, blood sugar levels and blood pressure.[52] ASHA workers schedule home visits to educate women and their families about the importance of follow-up medical examinations.[53] Further incentives are provided for pregnant women to visit medical facilities via the Janni Suraksha (Mother Protection) Scheme, through which mothers receive INR 700 rupees if they register as soon as they are pregnant.[54]

One initiative linking healthcare and nutrition is the district panchayat's tuberculosis treatment policy. The health department provides free diagnosis and treatment to patients under the Revised National Tuberculosis Programme. This initiative emerged due to the recognition that TB patients often belong to poor families and become susceptible to the disease because of malnourishment. The district panchayat provides nutrition kits to 250 TB patients, containing 5 kg of multigrain flour, 5 kg of jaggery and 1 kg of ghee (clarified butter).[55]

Sanitation

While sanitation is not explicitly linked to nutrition policy in the district, the Rural Development Department of the district administration is prioritising the Swachh Bharat Mission, to work towards full toilet coverage in Sabarkantha. The district panchayat gives INR 12,000 to INR 15,000 to eligible households to build toilets.[56] One representative from the Ranchhodpura (village) panchayat in the district explained that as 100 per cent toilet coverage is a top priority, the panchayat surveyed the village and listed households that do not have toilets. As it realised households may not have the funds available to construct toilets, the panchayat hired a contractor who built all the toilets. Once the toilets were built, government officials paid beneficiaries after inspecting the construction and the beneficiaries, in turn, paid the contractor.[57] However, while toilets are built, usage is still a challenge as many find maintaining toilets unpleasant. Informally, ASHA workers support sanitation initiatives through awareness and behavioural change programmes.

Water and Hygiene

The district panchayat implements piped water supply schemes, as well as hand pumps for drinking water supply. For example, in 2015, the district administration in collaboration with the Water and Sanitation Management Organisation launched a pilot project for water connection at the doorstep of homes in the tribal taluka Poshina. Mini pipelines are installed with storage tanks of 5,000 litres and pumping machines.[58] In places where water connections are not available, the panchayat arranges for a tanker that supplies water to the households. However, while there is a focus on access to water, there is limited emphasis on clean water. Households can receive tablets to purify drinking water from ASHA workers, but there are no other initiatives to ensure drinking water is of

[52] Interview,Female Health Worker, Sabarkantha
[53] Interview,Female Health Worker, Sabarkantha
[54] Interview,Female Health Worker, Sabarkantha
[55] http://www.slideshare.net/BhargaviDave/innovative-projects-executed-in-ahmedabad-sabarkantha-district ; confirmed in interview with district official.
[56] Living under the BPL, SC/ST/OBC families, one family member being physically handicapped, small and marginal farmers who have less than 2.5 acres of land as well as dependents, widows and senior citizens
[57] Rural Development Officer (Officers' Retreat), Sabarkantha
[58] http://www.wasmo.org/downloads/mini_piped_supply_scheme.pdf

high quality. However, there are awareness drives on water hygiene currently being implemented. As part of mother-child care, ASHA and anganwadi workers continue to provide awareness of hygienic practices to expectant and new mothers.

4.2.4 Women's welfare and gender-related programmes

The Gujarat Government has a state policy for gender equity. The Nari-Gaurav 2006 was developed with the objective of mainstreaming gender concerns in the state's development plans.[59] The Women and Child Development Department is the nodal agency for the implementation of this policy. However, this does not appear to be executed at the district, and there are no policies specifically focussing on empowering women and increasing their agency and decision-making within the household or community.

Likewise, there are no government schemes that link women's empowerment and intra-household decision-making ability with nutrition in homes and communities. However, the district administration implements various women's welfare and gender-related programmes, such as family planning, self-help group financial inclusion schemes, and training programmes and subsidies for women farmers.

Most schemes on health and nutrition focus on maternal health through the Integrated Child Development Services and Integrated Women's Development Services.

To enable financial access for women, the district is implementing the Sakhi Mandal Yojana to form self-help groups (SHGs) for savings and accessing credit. These SHGs can open a bank account at the nearest cooperative bank to secure their deposits and borrow loans under the SHG-NABARD bank linkage programme. Additionally, microfinance institutions such as Ujjivan are active in the district.[60]

4.3 Role of non-state actors

The Sabarkantha District Panchayat works with non-state actors, particularly non-profit organisations, to implement health and nutrition-related initiatives. For example, they worked with CHETNA, the Public Health Foundation of India, and the District Health Society to organize Adolescent Health Day (AHD).[61]

CHETNA piloted the Rashtriya Kishor Swasthya Karyakram (RKSK) in 73 villages of Talod block of Sabarkantha. Under this project, they worked on capacity-building and training of frontline workers (ASHA, multipurpose workers, anganwadi workers and teachers) in six identified areas[62], including nutrition.[63] CHETNA additionally works with SHGs to sensitise them on health and nutrition issues since they hold more influence in communities and can contribute to behaviour change.[64] CHETNA

[59] http://www.grcgujarat.org/pdf/4Nari-Gaurav-Niti-ENG-FINAL-BOOK.pdf
[60] http://www.gujaratindia.com/initiatives/initiatives.htm?InitiativeId=jJr8IjlsO7h8X7hPx1JgSw==
[61] http://skbank.co.in/
[61] http://skbank.co.in/download/loan/InterestRat eforDifferentLoan.pdf
[62] http://www.sewa.org/annual_report2004_part_b_ruralunion.asp Mental Health, and Substance Abuse
[63] http://chetnaindia.org/wp-content/uploads/A-report-26-11-15_opt.pdf
[64] Interview with CHETNA

uses the school system in Sabarkantha to conduct nutrition awareness programmes. It is also implementing a small project in seven villages in Sanand taluka on complementary and supplementary feeding.[65]

The Sabarkantha district panchayat also collaborates with other panchayats within the state to ensure exchange of ideas and resources such as the Twin District MoU with Ahmedabad. The Gujarat government also sanctioned funds towards setting up of the Kamadhenu University in Sabarkantha district to undertake research in animal husbandry.[66]

The Public Health Foundation of India (PHFI) studied the Chiranjeevi Yojana and health facilities for obstetric services among women in Sabarkantha.[67] The Indian Institute of Public Health, launched by PHFI, is conducting research on public health in the district, with recent articles on tuberculosis and young people's reproductive and sexual health in Sabarkantha district.[68]

The Self-Employed Women's Association (SEWA) set up the Swashrayi Mahila Khedu Mandal, a district-level women farmers association to improve yield as well as to build capacity of members.[69]

In terms of financial inclusion, the Sabarkantha District Central Cooperative Bank[70] is based in Himmatnagar and serves all talukas of the district. It offers deposit services, loans under joint liability and loans for agricultural activities at an interest rate of 12.50 per cent.[71] Additionally, many households in the district have taken loans from Bangalore-based MFIs, Janalakshmi, and Ujjivan.[72]

4.4 Discussion

In sum, nutrition is seen as the primary area of the health department. However, the district panchayat acknowledges the role of food availability, food production, and sanitation and hygiene in influencing nutrition outcomes.

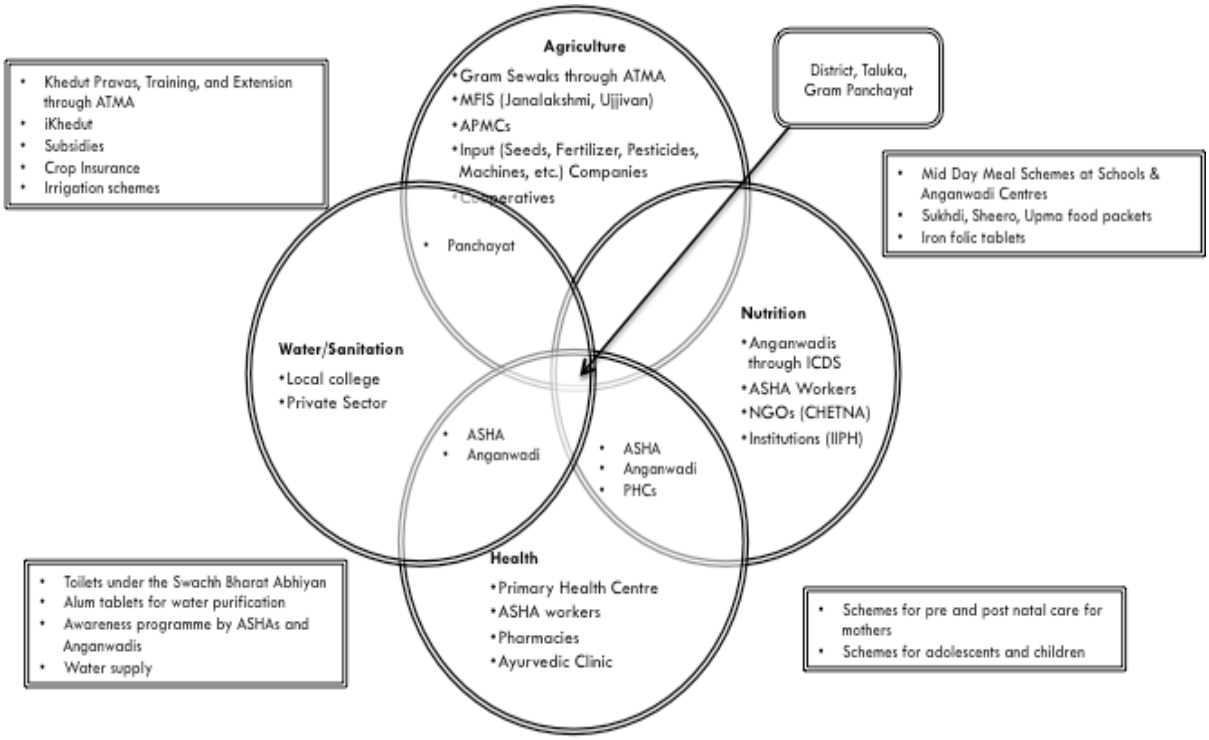
In spite of this, there is no coordination across departments. As one stakeholder observed, "The food, agriculture and nutrition come under the Food Security Act which is the Food and Civil Supplies Department, the Women and Child Development, Agriculture and Health. But we do not see any departments sitting together."[73]

While departments do not collaborate on nutrition-related schemes, the frontline workers, including ASHA and anganwadi workers, have overlapping functions across schemes. For example, ASHA workers are instrumental in implementing maternal health-related programmes. They are also responsible for distributing tablets for water purification and for sensitising the community on sanitation and hygiene practices. The anganwadi centres work on ensuring food access to children

[65] Interview with CHETNA
[66] http://deshgujarat.com/2009/07/04/kamdhenu-university-to-be-set-up-in-sabarkantha-district/
[67] https://www.phfi.org/index.php/?option=com_content&view=article&id=1498&Itemid=566
[68] https://www.phfi.org/index.php/?option=com_content&view=article&id=1501&Itemid=583
[69] http://www.sewa.org/annual_report2004_part_b_ruralunion.asp
[70] http://skbank.co.in/
[71] http://skbank.co.in/download/loan/InterestRateforDifferentLoan.pdf
[72] Household focus group discussions, Ranchhodpura
[73] Interview with NGO representative, Sabarkantha.

registered with them, while they are also supposed to ensure that the mothers are counselled on nutritious food.

Figure 2: State and Non-State Actors and Initiatives in the District Ecosystem



Nevertheless, the district panchayat is actively collaborating with a range of non-state actors, including academia and civil society to monitor, research and implement programmes that affect health and nutritional outcomes.

The district panchayat recognises the role of women in enabling improved nutritious outcomes, as primary caregivers. However, while there are programmes targeted towards improving maternal and child health, there are no programmes that help empower or improve women's decision-making ability within the households.

5. Case Study 2: Bijapur

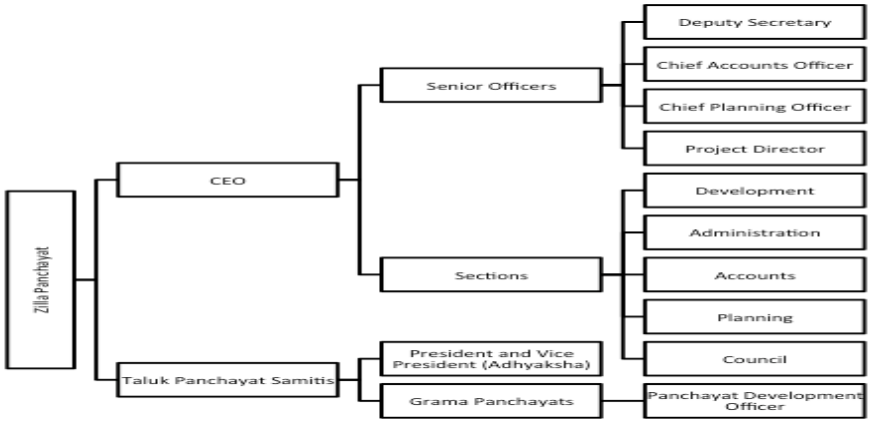
The case study begins with an overview of the district and local governance structure before reviewing programme implementation by the local government in the nutrition sector as well as in those with relevance for nutrition (including agriculture; food access and security; health, water, sanitation and hygiene; and women's empowerment). That is followed by a section on the role of non-state actors, before a discussion on nutrition policy and implementation within the district ecosystem.

Bijapur district is predominantly rural and is located in North Karnataka, sharing borders with two Maharashtrian districts, Sangli and Sholapur. It consists of six talukas: Indi, Bijapur, Sindgi, Basavana Bagevadi, Muddebihal and Tallikota. The district has five nagar palikas, five taluk panchayat samitis

and 199 gram (village) panchayats.[74] District headquarters is in Bijapur town, which also has the largest railway station.[75]

Bjiapur's local government is led by the Deputy Commissioner who is the head of district administration. The three-tiered local governance structure includes panchayats at the district-, taluka- and village-levels. The Chief Executive Officer (CEO) of the district (zilla) panchayat is appointed by the state to oversee administration and implementation of schemes in 27 different areas. Four senior officers assist the CEO with the implementation of all development programmes and schemes in the district. These areas include agriculture, education, health, forest, public health, engineering, irrigation and fishery.[76]

Figure 3: District Administration Organisation



To encourage innovation and entrepreneurship in the state, the Karnataka ICT Group set up incubation centres in the ICT sector in nine districts with Bijapur being one of them.[77] The Bijapur incubation centre was set up in BLDEA VP's Dr. PG Halakatti College of Engineering and Technology; ten IT-related projects will be funded through the incubation centre, each receiving INR 300,000.[78] Additionally, public-private partnership projects are underway, such as a 500 MW solar park planned in 2012.[79]

5.1 Implementation of nutrition programmes

Nutrition-related programmes in Bijapur fall under the Department of Women and Child Development, which implements ICDS to improve the nutritional and health status of the district's children. It follows that nutrition programmes are primarily concerned with young children and pregnant and lactating mothers. The Department of Health and Family Welfare is engaged in the

[74] http://dcmsme.gov.in/dips/DIP-BIJAPUR.pdf
[75] For more district data, see **appendix No appendix available**
[76] http://www.bijapur.nic.in
[77] http://www.ictsds.karnataka.gov.in/?q=project/new-age-incubation-network-%5Bnain%5D
[78] http://www.bldeacet.ac.in/kbits.aspx
[79] http://www.dnaindia.com/bangalore/report-bijapur-village-to-get-500mw-solar-park-1736148

delivery of district healthcare through programmes focused on reproductive child health, family welfare, immunisation and nutrition.[80]

A Nutritional Rehabilitation Centre was established in Bijapur town under the National Rural Health Mission.[81] It provides treatment and rehabilitation to malnourished children aged between six months and five years. It also counsels parents on the dietary requirements of children. After treatment at the centre, anganwadis or PHCs in the patients' villages monitor the children's health.

The state government has set up committees and nodal offices at the district level to make sure that the supply of medication and nutritional supplements reach beneficiaries on time.[82] Additionally, the district administration has recently developed a tracking system to monitor malnourished children and ensure they are receiving the required supplements distributed by anganwadi centres.[83] Each anganwadi centre keeps a record of the children's height and weight. The tracking system is a book that has growth charts for every child in the centre. This helps to identify severely malnourished children. The anganwadi workers coordinate with the PHC to ensure that malnourished children are provided appropriate treatment, and also coordinate with ASHA workers during immunisation drives.

A particular challenge in the district is the prevalence of migration of families for at least part of the year to seek livelihoods elsewhere because of drought conditions. When families migrate, children are taken out of schools and anganwadis, and thus do not have access to regular malnutrition-related check-ups or treatment.[84] However, to date, there is no specific programme working with the effects of migration.

Nutrition programmes run by the local anganwadi centres include the Kishori Shakti Yojana that trains adolescent girls on healthy eating habits, among other things. The anganwadi also hosts mothers' meetings three times per month to provide ante-natal and post-natal care, and childhood immunisations. Anganwadi representatives work closely with village ASHA workers, conducting immunisation programmes and caring for severely malnourished children.[85]

Bijapur anganwadi centres provide midday meals to children not yet in school. An anganwadi representative however noted that the quantity and quality of food supplied to children is poor, because contractors provide inadequate quality food supplies.[86] Anganwadi workers do not have a say in what meals are prepared, and there is a lack of locally-grown food. The anganwadi workers also believe that eggs and fruit should be included in children's daily diets, especially since the low purchasing power of village households deter them from consuming such foods.[87]

[80] The Karnataka government announced and launched a comprehensive nutrition mission in 2010. The mission is currently being implemented in three priority blocks, none of which are in Bijapur district.
[81] http://www.thehindu.com/todays-paper/tp-national/getting-malnourished-children-back-on-the-right-track/article3644131.ece
[82] Senior Official, District admistration, Bijapur
[83] Anganwadi Worker, Inchegeri, Bijapur
[84] Senior Official, Women and Child Development, Bijapur
[85] Anganwadi worker
[86] Anganwadi worker.
[87] Anganwadi worker

The district's Karnataka Milk Federation implements the Ksheera Bhagya scheme, providing milk and milk powder to children in schools and anganwadis.[88]

5.2 Programmes and activities in sectors related to nutrition

Below we review programme implementation and other activities in sectors related to nutrition that go beyond the nutrition programmes detailed in section 5.1.

5.2.1 Food production: Agriculture

In Bijapur, the biggest challenge in the agriculture sector[89] is the effect of drought on the livelihoods of farming households. Most farming households have access to water from canals. However, farmers growing cash crops are mostly dependent on bore wells, where water levels are getting depleted. By 2018-19, the district administration and the zilla panchayat are aiming to bring irrigation water to the fields of all district farmers.

To ensure soil and moisture conservation, the Department of Agriculture and the Rural Development Department have implemented several watershed development programmes, named Pradhan Mantri Krishi Sinchayee Yojana.[90] However, stakeholders note that the government compensation over drought is not enough to recover losses.[91]

In spite of the scarcity of water in the district, sugarcane cultivation, which is a water-intensive crop, remains common. District administration representatives see the need for sugarcane farmers to diversify to other crops, such as horticulture, and the National Rural Horticulture Mission is active in Bijapur promoting the cultivation of vegetables, fruits, flowers, plantation crops, spices, and medicinal aromatic plants. However, there is a lack of storage facilities for vegetables and fruits locally.[92][93]

Due to the lack of farming opportunities, MGNREGA is important. It is implemented by the Department of Rural Development and has covered activities such as rural connectivity, flood control and protection, water conservation and water harvesting, drought proofing, micro irrigation works, provision of irrigation facility, renovation of traditional water bodies, land development, and implementing vermicomposting for horticulture in the district.[94] However, there have been

[88] It also implements schemes for the Department of Women and Child Development, particularly the Support Training And Employment Programme for Women that operates 86 out of 324 women-run milk cooperative societies in Bijapur Source: Representative, KMF Nandini

[89] The Joint Director for Agriculture oversees the implementation of agriculture- and irrigation-related activities in the district. In addition, the Karnataka State Department for Agriculture provides support services, such as technology and information dissemination to farmers; supply of agricultural inputs; maintenance of soil fertility; and arranging market linkages for farmers' produce. District veterinary hospitals are a part of Karnataka's Department of Animal Husbandry and Veterinary Services. Source: http://www.vijapuraonline.in/city-guide/animal-care-services-in-bijapur

[90] Joint Director Agriculture

[91] interview with representatve from Vishala

[92] interview with representatve from Vishala

[93] The Karnataka state government has proposed to set up of food parks in the district through Food Karnataka Limited to process citrus, banana, pomegranates and grapes to produce fruit-based products like jam, jelly and squash. Source: http://www.thehindu.com/business/karnataka-to-set-up-food-park-in-bijapur/article21120.ece

[94] http://nrega.nic.in/netnrega/mpr_ht/mprall_distwise_new.aspx?state_name=KARNATAKA&district_name=BIJAPUR&district_code=1507&fin_year=2008-2009&month=99

suggestions of irregularities in the implementation of the scheme at the village level.[95] Additionally, many farm-dependent households now migrate for part of the year, in search of work.

The District Agriculture Department is implementing schemes to open up markets for farmers. An e-trading initiative, for instance, has brought in positive results, and the district administration is implementing reforms in phases to reduce the dependence on middlemen and ensure that farmers receive better prices.[96] However, there are no incentives or initiatives to produce food for consumption locally.

5.2.2 Food access and security

While food production comes under the purview of the Department of Agriculture, the Food, Civil Supplies and Consumer Affairs Department is responsible for food distribution. The Karnataka Food and Civil Supplies Corporation Ltd in Bijapur ensures the food security of households through the public distribution system.[97] In May 2015, the Karnataka state government launched the Anna Bhagya Yojana to supply foodgrains free of cost to low-priority households.[98] An NGO representative notes that ration shops under the PDS do not include the region's staple diet, jowar.[99]

Schools that provide midday meals serve vegetables, rice, sambar and *uppitu* (upma or cooked semolina) to children. School staff prepare meals on the school premises. While they provide meals six times in a week, schools do not supply nutritional supplements to students apart from milk powder. Schools do, however, conduct annual medical check-ups, and maintain a record of children's height and weight. The government disburses funds to the school headmaster's account for midday meal ingredients on an annual basis.[100] As noted above, at anganwadi centres, staff prepare food for children up to six years of age.[101]

5.2.3 Health, water, sanitation and hygiene

This section covers health policies other than nutrition policies, which had been covered in section 5.1., together with water, sanitation and hygiene.

Health

The District Health Officer in Bijapur, from the Department of Health and Family Welfare, is responsible for all public health programmes implemented in the district. As of March 2014, there were 78 government hospitals and 790 private hospitals.[102]

The PHCs cover about 10 villages, with ASHA workers the main link between the PHC and a household. ASHAs provide information to women on pregnancy, safe delivery, breastfeeding,

[95] Local district stakeholder
[96] Senior Administaryor, Agriculture
[97] In 2014, at an Aahar Adalat conducted by the Ministry of Food and Civil Supplies in Bijapur, it was noted that fraud was becoming an issue. Ineligible families were seeking PDS rations by using bogus cards.[97] Photographers are now supposed to be present at ration shops to photograph beneficiaries for government records Source: http://www.thehindu.com/business/karnataka-to-set-up-food-park-in-bijapur/article217120.ece
[98] http://ahara.kar.nic.in/annabhagyyojana.html
[99] NGO representative
[100] Headmaster Primary School
[101] Based on conversation with worker, Anganwadi Centre.
[102] http://www.bijapur.nic.in/PDF/Bijapur_dist_stat13_14.pdf

immunisation, family planning and infection prevention. The local PHC registers pregnant mothers and offers free monthly check-ups. However, there are irregular follow-ups from some patients since many of them are migrants travelling outside their villages and do not follow medical advice or prescriptions. There is an intermittent supply of vitamin C and folic acid tablets from the taluka office, and the PHC faces a shortage of such supplements. [103]

According to Karnataka State Health Policy, Bijapur is a poor-performing district with respect to key mother-child health indicators.[104] Bijapur lags behind other districts in terms of under-nutrition in children under the age of five and anaemia in women. According to a PHC doctor, communicable diseases (e.g. tuberculosis), water-borne disease and non-communicable diseases (e.g. diabetes, rheumatic arthritis) are common in villages in the district.[105]

Sanitation and Hygiene

The zilla panchayat in Bijapur implements toilet construction programmes through MGNREGA. Nevertheless, there is low toilet coverage in the district. However, with more women joining the gram panchayat, as well as awareness drives in the district, the demand for improved sanitation solutions has been increasing.[106] Gram panchayat members believe key challenges include lack of water schemes for toilets, and the slow processing of funding by the government for constructing toilets.

Water and Hygiene[107]

As noted previously, Bijapur suffered from drought during 2015-2016, and at the time of fieldwork in early 2016, the district relied on 800 to 900 water tankers plying daily to provide drinking water to all district households. The district administration is attempting to ensure that no household member has to walk more than three km to access water. As the district administration has recognised that water tankers are not a long-term solution, it has requested a large fund from the state government to provide water for 1,000 habitations. They expect to achieve water security within 18 to 24 months. There are no awareness drives to ensure hygienic practices such as water being boiled or filtered.

5.2.4 Women's welfare and gender-related programmes

There are no government schemes that link women's empowerment and intra-household decision-making ability with nutrition in homes and communities. Schemes that link women and nutrition focus mainly on pregnant and lactating mothers as well as adolescent girls. Bijapur has taken up the Beti Bachao scheme to reduce the incidence of female foeticide and improve the district's sex ratio, with specific five- and 10-year targets that have been set by the district.

The Department of Women and Child Development implements programmes supporting the economic empowerment of women. For example, the Sree Shakti Programme supports SHGs that

[103] Doctor at PHC
[104] E.g. e.g. safe delivery, complete immunisation, family planning methods. Source: http://karhfw.gov.in/PDF/STATE%20HEALTH%20POLICY.pdf
[105] Doctor at PHC
[106] interview with representatve from Vishala
[107] Section based on information from senior official's at the knowledge dissemination workshop

undertake a number of income-generating activities, including production and sale of ready-made garments; marketing seeds and manure; production and sale of *papad*, sambar powder, and agarbathi (incense sticks), as well as dairy and animal husbandry enterprises.[108]

Through Raita Kendras, the district panchayat organises training programmes for women farmers, in collaboration with Krishi Vigyan Kendra (KVK), which is a part of the University of Agricultural Sciences in Dharwad.[109] In addition, KVK organises group meetings, field days and diagnostic field-tests.[110]

5.3 Role of non-state actors

There are no NGOs that work on nutrition specifically, in Bijapur. Instead, the NGOS work across multiple sectors like health, agriculture, women's empowerment and micro-financing.

There are relatively few collaborations between academia, private sector, civil society and the district administration in Bijapur. There are some exceptions, though. For instance, one of the local NGOs used to implement the Pradhan Mantri Krishi Sinchayee Yojana programme to improve soil and water conservation.[111]

Sabala, an NGO, runs a cooperative for low-income families who cannot access credit through micro finance institutions in the district,[112] for agricultural purposes, housing or to set up small-scale businesses.[113]

Vishala, another local NGO[114], has implemented a number of watershed programmes in the district. They also have a kitchen garden programme, which provides manure, seeds and bio- pesticides. Lastly, they support women's collectives and help them access credit.

BIRDS, a voluntary organisation, works on integrated rural development projects like community organisation, farming system development and promotion of indigenous technology for watershed development, among other activities. These projects are undertaken on behalf of the Government of India, the Government of Karnataka, and international agencies, like OXFAM.[115]

In terms of research, the Karnataka state government is working with the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) to develop a farmer-centric, scientific, inclusive and market-oriented farming system. Additionally, many technology-oriented extension systems, such as DIGITALGreen and Krishi Gyan Sagar (KGS), have been piloted in the district

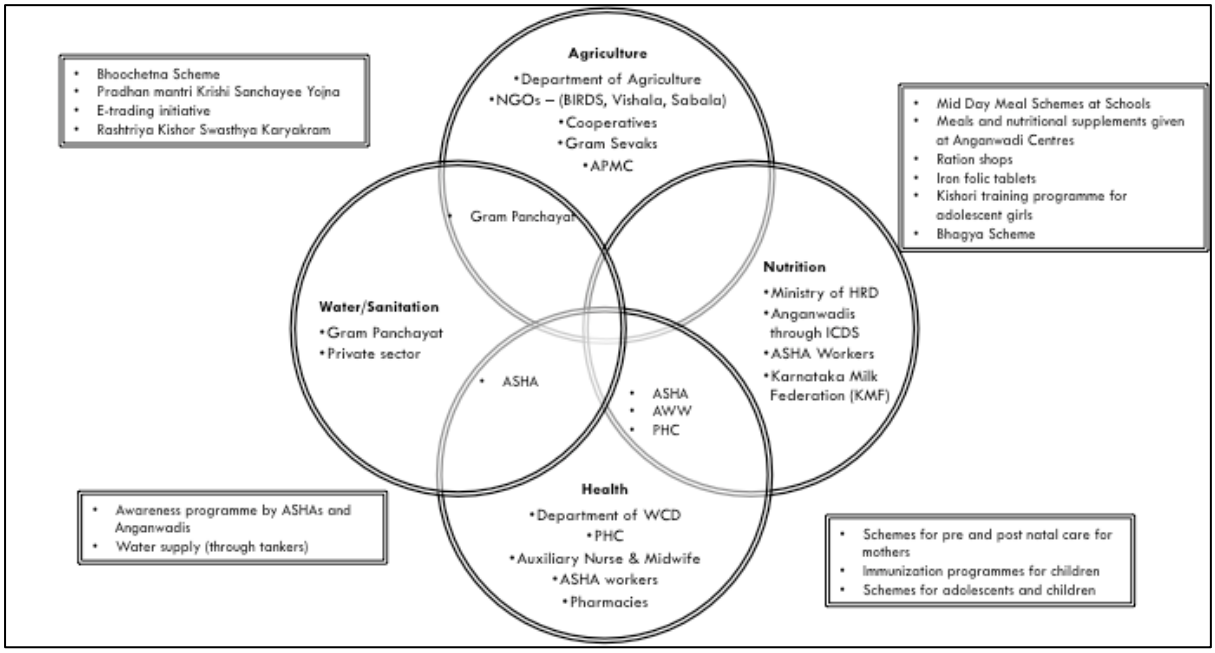
[108] http://dwcd.kar.nic.in/dwcd_english/prg_women.html#santhwana
[109] http://www.kvkbijapur.org/3CLayout.aspx?lang=Eng
[110] Other state-wider programmes include Santhwana, which provides legal and financial relief to women who face physical or verbal harassment; and Karnataka Mahila Abhivrudhi Yojane that seeks to ensure that there is gender equality in the labour force. It is unclear as to how many of these programmes are being implemented in Bijapur, and if so, how successful they are. There are no district-specific programmes being implemented.
[111] However, this is now being implemented by an NGO in Tumkur district, in another part of the state.
[112] Interview with senior representative, Sabala
[113] Additionally, the NGO sells fair trade handicrafts, employing women from the district in selling indigenous jewellery, clothing and bags.
[114] Interview with senior representative, Vishala
[115] Other active NGOs are Power NGO, which works on soil conservation and income generation activities, and sets up cooperative societies, and Ujwala, which works on children's issues such as child marriage and harassment.

(ICRISAT 2013).[116],[117] However, while agriculture-centric, these programmes do not link to nutrition in any way.

5.4 Discussion

To sum up, the district administration in Bijapur does not currently implement district-specific programmes (such as kitchen gardens, or additional nutrition programmes) over and above the schemes that are stipulated by the state and central governments. Each of the different government departments works on separate programmes, and there is limited coordination across Ministries and Departments. Nutrition, therefore, is primarily treated as a health and food access issue affecting children, and is mainly taken care of by ASHA and anganwadi workers. These frontline workers serve as links between health and nutrition, but not necessarily between agriculture and nutrition.

Figure 4: State and Non-State Actors and Initiatives in the District Ecosystem



While there is greater need for coordination between the different government Ministries and Departments, frontline workers, particularly ASHA and anganwadi workers, play an important role in enabling improved nutrition and implementing schemes from different departments. Through communicating with mothers and children, they give formal and informal advice on nutritious food, and good water, sanitation and hygiene practices, while also providing some of the healthcare services.

Lastly, it should be noted that the drought and migration have had a negative impact on nutrition in the district, as both agricultural production and livelihoods have been affected, as well as access to

[116] The DIGITALGreen project involved knowledge-sharing amongst farmers through videography. Farmers' families were trained on how to shoot videos of initiatives they are putting into practice and share it within their network (ICRISAT 2013).[116] The other successful technology-oriented programme piloted in Bijapur, KGS, is a tablet-based extension system whereby soil fertility maps, fertiliser recommendations and farmer registration for different crops are available in Kannada.

[117] http://idc.icrisat.org/wp-content/uploads/2015/09/Bhoochetana-II-Report-Final-2013-14-1.pdf

water, and access to healthcare and nutrition services (when families migrate outside the district in search of work).

6. Discussion

To reiterate, this paper discusses the district-level ecosystem for nutrition, which includes national and state policies determining the focus of the district administration, the implementation of different policies and programmes associated directly with nutrition or related to underlying factors (e.g., health, sanitation, agriculture), together with governmental and non-governmental actors associated with those programmes and sectors. The broad question is: how are policies and programmes related to nutrition implemented through the district ecosystem?

6.1 Nutrition programmes and initiatives

Overall, nutrition schemes primarily focus on treating malnutrition and on measuring and monitoring undernutrition in young children. The second focus area is providing supplements to pregnant and lactating mothers, and the third includes schemes in each district teaching teenage girls about healthy eating habits.

Table 1 Nutrition Programmes and Activities: Examples

Sabarkantha	Bijapur
• The state nutrition cell offers a similar scheme to ICDS for the same group: MAMTA Abhiyan, which tackles micronutrient deficiencies by providing supplements. • Kasturba Poshan Sahay Yojana is a conditional cash transfer scheme for pregnant women based on taking nutritional supplements and completing immunisation. • The district has set up a child development and nutrition centre to provide care and food for undernourished kids for up to 22 days. • Sabarkantha is one of 12 districts in the state selected for state-based intensive nutrition programme in anganwadis; first phase is screening children up to six years. • UNICEF works with district administration to implement a similar anganwadi based programme, tracking weight of children up to five years, and providing food at home for undernourished children, as well as counselling of parents. • The district administration has started an initiative of counselling mothers-in-law on nutrition and food habits of young women in	• A nutritional rehabilitation centre has been established under the National Rural Health Mission. It provides treatment for malnourished children below the age of five. It also counsels parents on dietary needs of children. Once discharged, children are monitored by anganwadis or PHCs. • The state government launched a nutrition mission in 2010 to tackle anaemia; however the district was not selected as a priority district. • The district administration has developed a tracking system for child malnutrition through anganwadi centres. The centres also provide nutritional supplements to pregnant and lactating mothers. The system is yet to be evaluated for its effectiveness. • To ensure that nutritional supplements and medicine reach intended beneficiaries, the state government has set up nodal offices at the district level to monitor the distribution. • Kishor Shakti Yojana training programmes hosted by anganwadi centres educate adolescent girls on healthy eating habits.

their families. • Organisations such as CHETNA and PHF run programmes, undertake research and monitoring in cooperation with the district administration.	• Karnataka Milk Federation implements its Ksheera Bhagya scheme in the district, providing milk powder to schoolchildren

While every state should have village health sanitation and nutrition committees, it was not evident that these are active in either district.

In Bijapur, a particular challenge is the high seasonal outward migration, which results in disrupted health treatment and monitoring. Migration also results in changed food habits that, in turn, make it harder to educate people about nutritious food. Another challenge in Bijapur is the poor quality and low quantity of food given to children through nutrition-related schemes at anganwadi centres and schools; this is blamed on profit-seeking contractors who make money on the food supplies.

Sabarkantha appears to have more district-level initiatives in nutrition, working under a broader remit, including involving mothers-in-law in ensuring a healthy nutritious diet at home. The district is also helped by additional nutrition programmes both by the state government (Intensive Nutrition Programme) and by UNICEF — both implemented in anganwadi centres.

However, neither district explicitly links sanitation, water or hygiene practices with nutrition. Nor does agriculture or access to local quality food feature in any nutrition policy or implemented programme.

It is noteworthy that while most of the programmes focus on access to supplements and access to better food, there are some initiatives working on behavioural change. This includes, for example, the anganwadi schemes in both districts that counsels parents on better food habits, and schemes for young girls learning to eat nutritious food.

Lastly, comparing the two districts, Sabarkantha appeared to have a more dynamic approach to nutrition, even though the main focus was on malnutrition. For example, more non-state actors are involved in programme implementation, there are more programmes —– including district-initiated programmes — and the district administration is keen on trying out new ideas, such as kitchen gardens, or involving mothers-in-laws to affect household change. On the other hand, with Bijapur severely affected by drought, it can be argued that access to food and water takes up a substantial amount of time and effort in the district and there is therefore less scope for focussing on nutrition per se.

6.2 Sectoral programmes and links with nutrition

6.2.1 Food production and security

Overall, there are very few links between agriculture schemes and nutrition policies in both districts. Production and supply of food does not have much to do with ensuring food quality. Food production is primarily concerned with agricultural production, and efficiency thereof. There is some focus on production of certain foods to ensure national food security. However, there does not

appear to be any link between food production and food security locally. Farmers increasingly prefer cash crops, and households increasingly buy foods in the market. Likewise, there are no clear links between food security (provision) and nutrition. For example, food distribution programmes provide wheat and rice though locally those may not be staple crops or as nutritious as those local crops.

Table 2 Agriculture and Food Security Programmes and Activities: Examples

Sabarkantha	Bijapur
• None of the agriculture programmes link in any way to nutrition policies. • A lot of farmers grow cash crops and there are no incentives provided for growing food crops instead. • The Gujarat state government has formulated an organic farming policy as well as set up a cell to encourage pesticide-free farming practices. None of these initiatives are visible in the district as of yet. • A new food security act, Maa Annapoorna Yojana, has been implemented in the state since April 2016, providing subsidised rice and wheat However, the scheme has not yet been rolled out across the district. There is also the national food security programme being implemented in the district through ration shops. • The midday meals scheme is monitored and implemented by the District Collector's office. The menu is decided by each taluka's midday meal programme. • The district administration started an initiative in primary schools to grow vegetables and herbs in kitchen gardens for midday meals. However, there was limited success as schools did not take care of the kitchen gardens as there were no clearly defined responsibilities and roles.	• None of the agriculture programmes link in any way to nutrition policies. • The National Rural Horticulture Mission is active in Bijapur and promotes cultivation of vegetable and fruit crops. However, there does not seem to be any explicit promotion of food crops over cash crops. • Digital agriculture extension systems such as Digital Green has been implemented in the district, but these do not connect to nutrition or food security. • Midday meals are provided in schools, and staff at each school prepare the food. Likewise, anganwadi workers prepare food for children at the centres.

Two examples of increasingly merging food production with the demand for healthy food are the organic farming scheme that Gujarat is looking to implement, as well as the local district initiative in Sabarkantha to create kitchen gardens. Neither has been successful, however.
Further, in Sabarkantha, it was noted that the midday meal scheme includes limited protein as there are only small quantities of pulses in the meal.

At a programme review conducted by the Ministry of Food and Civil Supplies in Bijapur in 2014, fraud was highlighted as a challenge. Furthermore, the move towards cash crops has resulted in fruit and vegetables increasingly being bought in the market. Bijapur is highly dependent on the monsoon and with two years of non-existent rains, the district suffered from drought, with a lot of land not being cultivated.

6.2.2 Health, Water, Sanitation and Hygiene

Healthcare programmes and services are provided through primary health centres in both Sabarkantha and Bijapur. At the health centres, ASHA workers are important links between providers of healthcare schemes and the beneficiaries. Together with anganwadi workers, these are the main interface with a majority of women and children.

Table 3 Health, Water, Sanitation and Hygiene Programmes and Activities: Examples

Sabarkantha	Bijapur
• Through health centres, 22 health schemes are implemented in the district. • The primary health centres employ ASHA workers as the main outreach workers. • 100% toilet coverage has been made a priority in the district, with the help of the Swachh Bharat Mission. The programme focuses more on building toilets rather than their usage or maintenance. • The district administration implements a piped water supply scheme as well as hand pumps across the district. • In 2015, the district collaborated with the Water and Sanitation Management Organisation on a pilot project to create water connections at the doorsteps of homes in a tribal taluka. There are water tankers in areas that do not have water resources. • Water purifier tablets should be available with ASHA workers.	• The primary health centres employ ASHA workers as the main outreach workers. • Anganwadi centres host mothers' meetings three times a month to provide ante-natal and post-natal care as well as immunisation. • The supply of protein supplements, multivitamin tablets, calcium tables, vitamin C and folic acid tablets is intermittent in spite of schemes that should ensure their availability. • In Bijapur, toilets are being built using the MGNREGA employment scheme. However, toilet coverage remains limited in the district. • Water is supplied through water tankers in the district following drought, with 800-900 water tankers plying the district daily. To deal with the water shortage, the district administration has requested funds from the state government to build better water infrastructure.

However, a health care concern in Bijapur is that the outward seasonal migration, with people leaving the district in search of work, results in irregular health check-ups.

Sanitation facilities are much better in Sabarkantha than in Bijapur, with the former aiming for 100% toilet coverage. Nevertheless, while toilets have been constructed, usage and maintenance is still a challenge. In Bijapur, the MGNREGA scheme is used to build toilets, but with limited success.

When it comes to water access too, Sabarkantha does better. However, with Bijapur suffering from drought, the district administration has employed 800-900 water tankers daily to ensure water

access for citizens. Additionally, the administration is planning to substantially improve the water infrastructure.

6.2.3 Women's empowerment and agency

There are no government schemes that link women's empowerment and intra-household decision-making ability with nutrition in homes and communities in either district. Schemes that link women and nutrition focus mainly on pregnant and lactating mothers as well as on adolescent girls.

In Sabarkantha, the district panchayat recognises the role of women as primary caregivers in enabling improved nutritious outcomes, and additional district-level programmes are provided. While there are no programmes tailored to women caregivers, the district does highlight the importance of the mother-in-law in ensuring that young pregnant women receive the nutrition and care they need. In Bijapur, however, there are no additional schemes or emphasis on the role of women at the district level.

Likewise, while there are state-wide policies in support of women in Karnataka, it is unclear as to how many of these programmes are being implemented in Bijapur.

Table 4 Women Empowerment Programmes and Activities: Examples

Sabarkantha	Bijapur
• The Gujarat government has created a state policy for gender equity but it is yet to be implemented. • There are no government schemes that link women's empowerment and intra-household decision-making ability with nutrition in homes and communities. • Schemes related to female health and nutrition focus on maternal and new-born health as well as the health of children up to the age of six, and of adolescent girls. This concerns both government schemes and programmes provided by NGOs. • To enable financial access for women, the district is implementing a scheme to form self-help groups. In addition, MFIs such as Janalakshmi and Ujjivan are active in the district.	• The state government implements programmes supporting the economic empowerment of women; for example, the Stree Shakti programme supports the formation of self-help groups • There are no government schemes that link women's empowerment and intra-household decision-making ability with nutrition in homes and communities. • Schemes related to female health and nutrition focus on maternal and new-born health as well as the health of children up to the age of six, and of adolescent girls. This concerns both government schemes and programmes provided by NGOs.

6.3 Collaboration: Role of state and non-state actors

Both district administrations appear to work primarily within government departments and sectors, with little overlap between sectors. Nutrition is mainly considered a health issue (with a focus on treating malnutrition). There are no committees on nutrition in either district that bring together stakeholders from across departments, sectors and schemes.

Sabarkantha district appears to be more active in collaborating both with other districts (through district twinning initiatives) and a range of organisations and institutions to implement and monitor programmes. For example, district officials work with UNICEF to implement a nutrition monitoring programme, they work with universities in Gandhinagar in relation to agriculture and health programmes and status, and they work with local NGOs to implement schemes. That, in turn, means that there are a lot of stakeholders involved in evaluating and monitoring progress in the district, and sharing their insights with the district administration.

Table 5 Roles and Functions of Non-State Actors: Examples

Sabarkantha	Bijapur
• Each government department implements separate schemes and there is limited collaboration across schemes or departments. • Instead, the integration takes place at the level of primary health centres and anganwadi centres through ASHA and anganwadi workers. • The district administration works with a number of organisations to implement and study programmes. They work with universities to study nutrition and agriculture. • UNICEF works with the district administration on a programme on malnutrition through anganwadis. • NGO CHETNA works with SHGs on food and nutrition sensitisation. They also work with the government, and together with Public Health Foundation India and the district administration organised an Adolescent Health Day. CHETNA has also worked in 73 villages of the district to train frontline workers including ASHA workers and teachers on nutrition. • Through a twin district MoU, the district administration exchanges ideas with Ahmedabad district administration.	• Each government department implements separate schemes and there is limited collaboration across schemes or departments. • Karnataka Milk Federation's Ksheera Bhagya scheme provides milk and milk powder to school-age children. • NGOs are involved in watershed management schemes that are creating infrastructure for irrigation and water access in villages across drought-hit areas. • The district works with ICRISAT to develop farmer-centric market and information systems. • NGOs work independently on implementing programmes without much collaboration with the district government. • Sabala runs a cooperative for low-income families who are not able to access credit through micro financial institutions in the district. • Vishala has implemented watershed programmes in the district. They also have a kitchen garden programme. • BIRDS work on integrated rural development projects like community organisation, farming system development and watershed development.

At the time of fieldwork, Sabarkantha had a very active District Magistrate who had started a lot of initiatives and was keen on bringing on board a range of non-state actors, and keen on receiving feedback on existing programmes and on how to improve them. He was transferred out of the district at the end of fieldwork, however. The transfer of officials in India can have a major impact on

existing programmes, especially locally-run ones as the incoming official may wish to prioritise other schemes.

In Bijapur, the district administration appears to be less involved in collaborations with civil society or the private sector. Instead NGOs provide support programmes separately, such as in agriculture and watershed management, and in livelihoods creation. One exception is the Karnataka Milk Federation's provision of milk for school-age children. Likewise, the district administration works with ICRISAT on improved systems and markets for farmers.

6.4 District nutrition ecosystems: Summarising

Do policies reach the district in silos and does implementation follow this vertical structure, with limited overlap between Ministries and Departments, in spite of nutrition being a multi-pathway issue?

We find that policies are department- and sector-specific and the implementation is vertical within the district as well. There are no cross-departmental committees on nutrition that would link stakeholders from different sectors. As such, nutrition is not recognised as having multiple underlying factors. It is noteworthy that there is no focus on women as primary caregivers and therefore at the core of nutrition-related policies. Rather, they are mainly considered as beneficiaries of pregnant and lactating women's programmes.

Does policy implementation primarily focus on improving access (to food, nutrients, sanitation, clean water, etc.) rather than on behavioural change?

While there are some initiatives to counsel parents (for example, of children who are malnourished) and schemes for adolescent girls to learn about nutrition, the primary focus is on access rather than behavioural change. Likewise, with respect to water and sanitation, there is an emphasis on number of toilets built and access to water, rather than on hygienic practices and behaviour

Are there a number of non-state actors working with the government in implementation of policies or providing alternative services and programmes where government does not do so?

There are non-state actors such as NGOs active in both states. However, Sabarkantha district appears to be more active in collaborating both with other districts (through a district twinning initiative), with NGOs in rolling out programmes, and with academic institutions in studying agriculture and health challenges. That in turn means that there are a lot of stakeholders involved in evaluating and monitoring progress in the district, and sharing their insights with the district administration. In Bijapur, NGOs provide separate programme interventions, while in Sabarkantha, NGOs work with the government.

The fact that Sabarkantha had a large number of on-going collaborations is likely the result of a very active District Magistrate who had started a lot of initiatives and was keen on bringing on board a range of non-state actors, and keen on receiving feedback on existing programmes and on how to improve them. Individual officials in India can have a major impact on existing programmes, especially locally-run ones as an official may wish to prioritise certain priority areas over others. Likewise,

Bijapur was suffering from drought at the time of fieldwork, and it may be that the district administration did not have the time to prioritise such collaborations.

7. Conclusion

This paper considered the implementation of nutrition programmes in two districts — Sabarkantha in Gujarat and Bijapur in Karnataka — drawing on a systems approach to detail programmes relevant to the multiple factors affecting nutrition. The aim of the paper was to show how programmes are implemented, the many actors associated with these programmes and the dynamics of the district-level ecosystem for nutrition.

We found that nutrition policies are to a great extent sector based and implemented vertically within the sectoral ministry. However, as nutrition is a multi-sectoral issue, integration does to some extent occur at the district level through ASHA and anganwadi personnel who implement a number of different schemes as frontline workers, and also provide awareness and information about nutrition-related issues such as sanitation and hygiene.

We found that the districts differed in their approach to nutrition, with Sabarkantha having a more ambitious standpoint to overcoming nutritional outcome challenges through multiple schemes and through collaborations with both the NGO sector and academia. Bijapur did not see as many collaborations. However, the district was at the time of fieldwork dealing with a severe drought that had affected agriculture-based livelihoods, access to water, access to locally grown food, and, as a result of outward migration, disrupted medical treatment.

With respect to gender in both districts, however, the role of women within the household, their empowerment and agency, was not considered as part of nutrition strategies by the district administration. Women were primarily taken into account as beneficiaries while pregnant or lactating.

Further research could expand on this by undertaking a deeper study of the complexities of implementing policies at the district and village level, as well as studies to consider how to change behaviour in areas that impact nutritional outcomes.

Appendix: District Context

The study was carried out in Bijapur, Karnataka and Sabarkantha, Gujarat, and this section provides select secondary data to set the context of the two districts and their villages.

Bijapur, Karnataka

Bijapur district is predominantly rural, and is located in North Karnataka, sharing borders with two Maharashtrian districts, Sangli and Sholapur. It consists of six talukas: Indi, Bijapur, Sindgi, Basavana Bagevadi, Muddebihal and Tallikota. The district has five nagar palikas, five taluk panchayat samitis and 199 gram panchayats.[118] District headquarters is in Bijapur town, which also has the largest railway station. The nearest airport is 164 km away in Belgaum.

The population in Bijapur has a literacy rate below the Indian average, at almost 72 per cent. On the other hand, the child and adult sex ratios are both above the national figures,though below those in Karnataka.

Table X: Education and Sex Ratio in Bijapur [119], [120]

	Literacy Rate	Adult Sex Ratio (2011)	Child Sex Ratio (2011)	Rural Population (% of total) 2011
India	74% (Rural: 67.8%; Urban: 84.1%)	940	914	68.8
Karnataka	75.4% (Male: 82.5; Female: 56.9%)	973	946	61.33
Bijapur	71.6 (Male: 79.6%; Female: 63.3%)	960	931	76.95

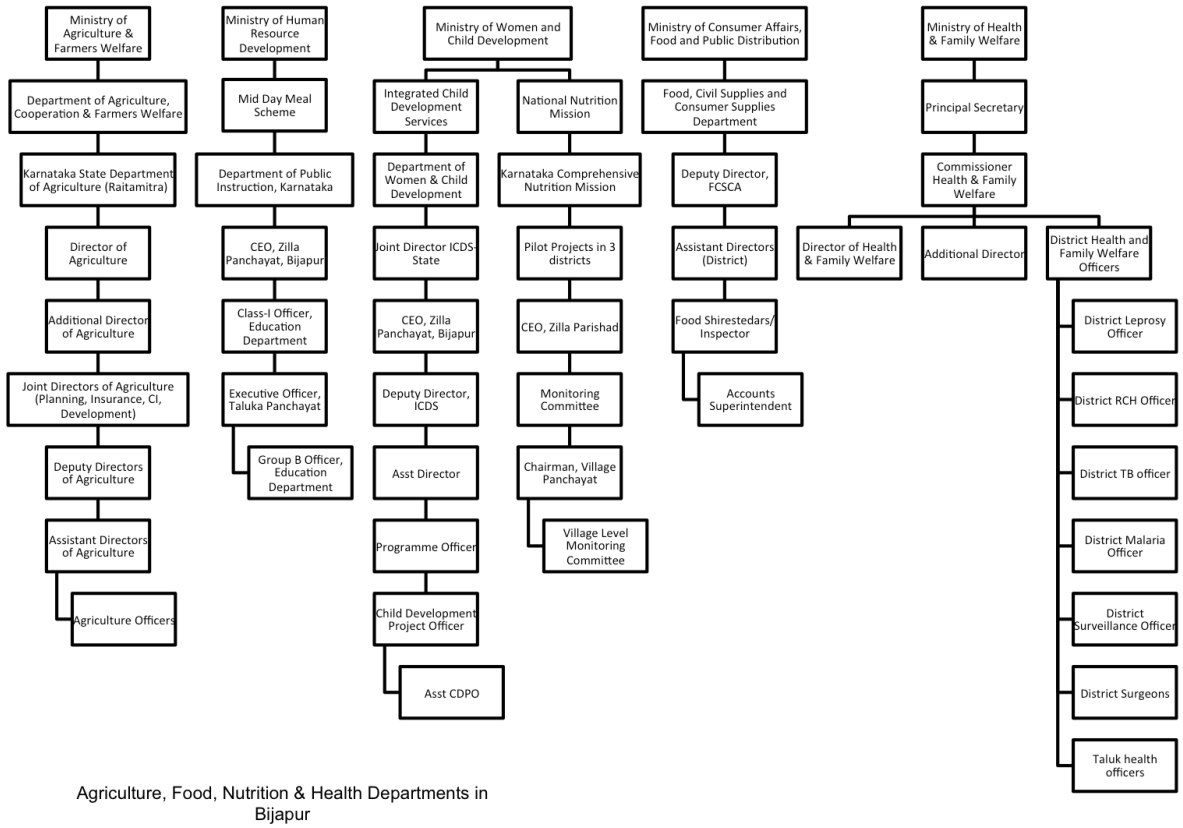
Bijapur is semi-arid and drought-prone with dry weather year round. Monsoon season, from June to October, is a major source of water for drinking and agricultural purposes.[121] At the time of fieldwork, in early 2016, the district had not received rainfall for two years and was suffering severely from drought.

Bijapur is mainly a foodgrains-producing district, with approximately 75 per cent of the agricultural land used for food crops, including jowar, bajra, wheat, paddy and maize. The main cash crops in Bijapur comprise sugarcane, cotton and tobacco.[122] A majority of industries in the district are agriculture-dependent, and employ around 30,000 people in the food and agro-processing category.[123] Sugar processing is Bijapur's most prominent industry and important for the local economy, though it has been affected by the drought.[124]

In terms of healthcare facilities, the district has 78 government hospitals, 60 primary health centres (PHCs) and nine community health centres. It has 3,927 *Stree Shakti* self-help groups with 52,485 members and over 2,100 active anganwadi centres.

[118] http://dcmsme.gov.in/dips/DIP-BIJAPUR.pdf
[119] http://www.census2011.co.in/
[120] http://www.bijapur.nic.in/PDF/Bijapur_dist_stat11_12.pdf
[121] Source: Bijapur District at a Glance 2012-13
[122] Source: Bijapur District at a Glance 2012-13
[123] http://dcmsme.gov.in/dips/DIP-BIJAPUR.pdf
[124] http://www.vijapuraonline.in/city-guide/industries-in-bijapur

Departments in Bijapur district relevant to nutrition



Agriculture, Food, Nutrition & Health Departments in Bijapur

Sabarkantha, Gujarat

Situated in the north of Gujarat, Sabarkantha district is spread across 7,390 square km, constituting about 4 per cent of the state's geographic area. The district's headquarters is Himmatnagar. It has 13 talukas[125] (of which four fall under the Tribal Development Programme), 318 panchayat kendras and 736 gram panchayats.[126]

Table: Education and Sex Ratio in Sabarkantha[127],[128],[129]

	Literacy Rate	Adult Sex Ratio (2011)	Child Sex Ratio (2011)	Rural Population (% of total) 2011
India	74.04% (Rural: 67.8%; Urban: 84.1%)	940	914	68.8
Gujarat	78% (Rural: 71.7%; Urban: 86.3%)	919	890	57.4
Sabarkantha	75.79%(Male: 86.44%; Female: 64.69%)	952	903	85.02

Sabarkantha has eight nagar palikas and is close to Ahmedabad, Gujarat's largest city, and Gandhinagar, the state capital. This means that while 85 per cent of the district is classified as rural and 60 per cent of the population relies on income from own land or working on other land as

[125] Himmatnagar, Prantij, Idar, Khedbrahma, Vijaynagar, Bhiloda, Meghraj, Modassa, Maalpur, Bayad, Vadali, Talod, and Dhansura
[126] https://sabarkanthadp.gujarat.gov.in/sabarkantha/Images/vva-2012-original.pdf
[127] http://www.census2011.co.in/
[128] http://gujecostat.gujarat.gov.in/wp-content/uploads/2014/34%20-%20Socio%20Economic%20Review%20(English).pdf
[129] http://www.bijapur.nic.in/PDF/Bijapur_dist_stat11_12.pdf

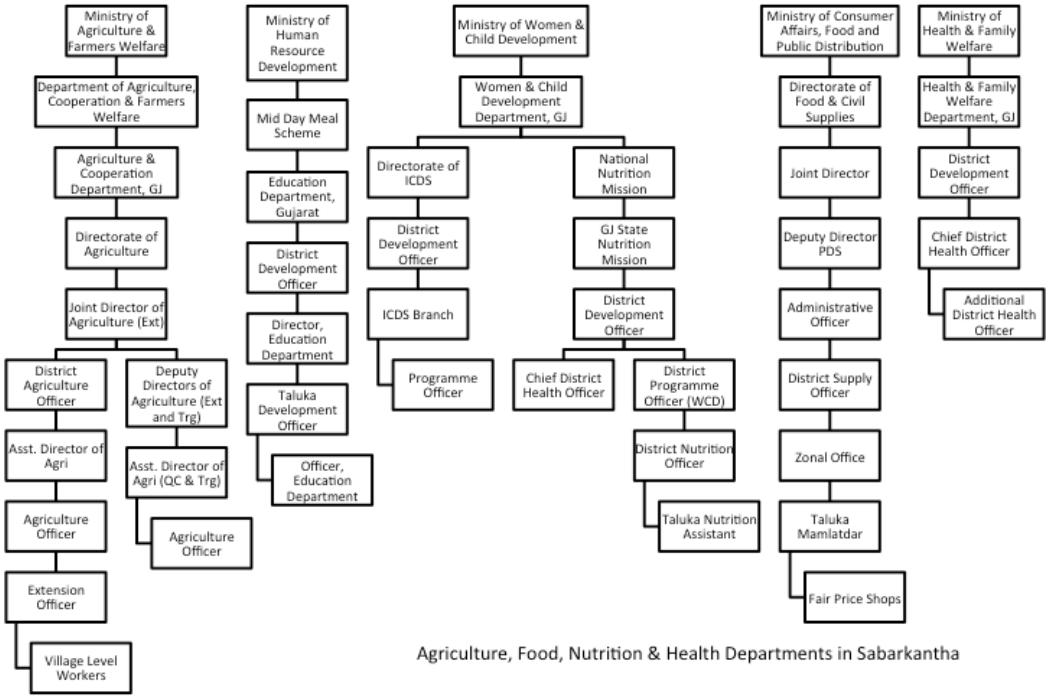
labourers (Census 2011), it is well connected to major markets. Under the district panchayat, there are 13 taluka panchayats.

The main crops are cotton, pearl millet (*bajri*), paddy, wheat, groundnut, tobacco and mustard. In addition to these crops, some talukas also grow wheat, maize, vegetables, fruits and pulses, like *adad* and *tuvar*.[130]

Compared to Bijapur, there is substantial industrial development in Sabarkantha, which provides farming families with supplemental income. The district's major industries include aluminium, agriculture equipment, tiles and ceramic products, and denim fabrics. There are 1,029 registered companies, small and large, in the district, with a majority providing repairs and other services. There are 12 large-scale companies or public sector undertakings, where six are located in Himmatnagar and five in nearby Prantij, where tiles and ceramic manufacturers are also concentrated.[131]

There are 68 primary health centres, 2,458 primary schools and 3,263 anganwadis.[132] Despite the increasing number of schools, the gender ratio and literacy rate are skewed. Sabarkantha's adult sex ratio is higher than that of Gujarat and India as a whole, but the child sex ratio is low. Literacy has increased in the past few years, but female literacy remains low.

Departments in Sabarkantha district relevant to nutrition



Agriculture, Food, Nutrition & Health Departments in Sabarkantha

[130] Source: District Panchayat Report, Report of Agriculture Department
[131] http://dcmsme.gov.in/dips/DIP%20SK.pdf
[132] http://gujecostat.gujarat.gov.in/wp-content/uploads/2014/34%20-%20Socio%20Economic%20Review%20(English).pdf

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