**GENERAL DESCRIPTION**

Different multidimensional shocks like pandemics and environmental pressures challenge the food production system and impact the health of humans and animals. The One Health concept emphasizes the linkage and interdependence between the health of humans, animals, agriculture, and the environment. This is particularly relevant for smallholder farmers in the rapidly urbanizing areas of Ahmedabad and Gandhinagar.

Urbanization increased the demand for food, but has made the livelihoods of those depending on agriculture more vulnerable to shocks. Many marginalized farmers increasingly depend on social protection to counter shocks and food insecurity. At the same time, increased pressure on the production environment has led to limited space for controlling food contamination and safety.

**INDIA**

**KEYWORDS**

- Urban Farmers
- Social Protection
- Food Security
- Agroecosystem
- Food Safety

**QUICK FACTS & RESULTS**

**INDIA**

- Better understanding and management of shocks related to food safety and security
- Providing information about shocks related to food safety and security
- Establishing information exchange channels including Community Groups and Awareness Campaigns
- Activating agricultural producers by different actors such as cooperatives, panchayat/municipal head, and NGOs
- Community Monitoring of the food production environment and the effectiveness of social protection schemes

**RECOMMENDATIONS**

- Increasing food demand with urbanization requires higher food production and consumption risk
- The access to social protection is especially unequal in rapidly urbanizing settings, affecting the food security of agricultural producers

**WANT TO GET IN TOUCH?**

- health@uni-bonn.de
- www.zef.de/onehealth

**CONTACT**

**MANAGING PARTNERS**

**COUNTRY PARTNERS**

**UNI BONN PARTNERS**

**FUNDED BY**
INDIVIDUAL BRIEF

AHMEDABAD (INDIA)

Pachillu Kalpana has completed her Master’s in Biotechnology and started her research career in Public Health with a desire to understand and engage in broader perspectives. Kalpana has a unique permutation of basic knowledge in science-based biology, laboratory skills, and work exposure to the community through multiple public health projects in her journey so far. Her research work focussed on strengthening Water, Sanitation, and Hygiene in Healthcare facilities incorporating microbiological surveillance and genotyping evidence of AMR transmission. In her doctoral study, she will be focussing on the transmission of antimicrobial resistance genes (ARGs) across species within domains of One Health.

KEYWORDS

AHMEDABAD, INDIA

Antimicrobial resistant bacteria
Agroecosystem

QUICK FACTS & RESULTS

AHMEDABAD, INDIA

LIMITATIONS & OPPORTUNITIES

The focus of the study is limited to only raw vegetables consumed and soil samples from agricultural farms in Ahmedabad, India. It restricted the other determinants that accounted for the spread of microbial contamination in agroecosystems. This study provides an opportunity to extend the research in the sector and further understand the risk of fresh produce transmission of AMR.

RECOMMENDATIONS

1. Promote awareness of all involved stakeholders, from production to consumers.
2. Enhance knowledge on the source of etiological agents responsible for contamination and their resultant diseases.
3. Implement quality standards for fresh produce and surveillance programs for agroecosystem.
4. Motivate more scientific research in the sector of AMR in agroecosystem in India.

MORE COUNTRY SPECIFICS BRIEFS

WANT TO GET IN TOUCH?

CONTACT

health@uni-bonn.de
www.zef.de/onehealth

MANAGING PARTNERS

COUNTRY PARTNERS

UNI BONN PARTNERS FUNDED BY

VEGETABLES AS A VEHICLE FOR AMR (vAMR): AN AGROECOSYSTEM EXPLORATION IN AHMEDABAD, INDIA

Antimicrobial resistance (AMR) has emerged as one of the leading threats to public health. It possesses a multidimensional challenge encompassing the food production system, influencing human and animal health. The One Health concept captures this scope by providing an avenue for the inextricable linkage and interdependence of the health of people, animals, and the environment. Antibiotics, ARB, and related AMR genes are assumed to present in the natural environment and disseminate resistance to fresh produce. Therefore, this study aims to investigate the role of vegetables in the spread of AMR through an agroecosystem exploration in Ahmedabad, India.

Quantiﬁcation of AMR genes in vegetables in Ahmedabad, India.

PACHILLU KALPANA

Antimicrobial resistance
Vegetables
Antimicrobial resistant genes

Fresh vegetables which are consumed raw or with minimal processing found contaminated with human pathogens. The Salmonella spp. was found to be highly prevalent in the both the vegetable and soil samples collected from the agriculture farms. Coriander, which is one of the very green and raw consumed vegetable was found to be highly contaminated. With regard to AMR, the present study conﬁrms the presence of drug-resistant E. coli, Salmonella spp., Klebsiella spp. and Pseudomonas spp. The multidrug resistance of the isolated human pathogens from the fresh vegetables can be a threat to the consumption level.

1. Promote awareness of all involved stakeholders, from production to consumers.
2. Enhance knowledge on the source of etiological agents responsible for contamination and their resultant diseases.
3. Implement quality standards for fresh produce and surveillance programs for agroecosystem.
4. Motivate more scientific research in the sector of AMR in agroecosystem in India.
In Gujarat, cattle-rearing women have faced challenges due to the COVID-19 pandemic and policy shifts. These women increasingly depend on social protection to counter shocks and food insecurity. There is a literature gap regarding how social capital specifically aids women in accessing formal social protection. Using data collected through a survey of 465 women, 29 in-depth stakeholder interviews, and 5 expert interviews, this research fills this void, focusing on women’s social capital and its role in accessing formal social protection and consequently food security.

**INDIVIDUAL BRIEF GUJARAT (INDIA)**

Sanjana’s research is centered in agricultural economics. She has completed her Master’s in Development Economics at the University of Göttingen where she also worked as a student assistant with the Chair of Development Economics/Centre for Modern Indian Studies. Sanjana has worked on projects pertaining to food security, social protection, and livelihoods in various parts of India. She has experience designing and supervising large-scale surveys and facilitating focus groups. Her primary research interests include the political economy of social protection, institutions, governance, and health. At ZEF, she is a part of the One Health Graduate School and is also an active member of the ZEF Gender Group.

**KEYWORDS**

GUJARAT, INDIA, Food Security, Gender, Social Protection, Social Capital, Dairy Cooperative

**QUICK FACTS & RESULTS**

1. Information about social protection is often disseminated by women to women. However, it is the men who make the ultimate decision regarding availing of these schemes. This disconnect often results in underutilization of available programs.

2. Information about social protection is passed on through WhatsApp groups. However, many women from marginal castes do not have access to phones or cannot read the message.

**RECOMMENDATIONS**

1. Promote women’s membership in dairy cooperatives to increase social capital.

2. Enhance information and resource sharing platforms so that information about social protection is disseminated to everyone equally and everyone has documentation to avail social protection. For this, information dissemination has to be diversified - not just WhatsApp but also community meetings.

3. Implement feedback mechanisms through which people can assess and provide feedback on social protection schemes. This will help in refining and adapting the programs to deliver better food security.

**LIMITATIONS & OPPORTUNITIES**

1. Geographical Scope: The findings, an interviewed cattle-rearing women from Gandhinagar and Ahmedabad, might not be generalizable elsewhere. An opportunity would be to extend the research to other parts of Gujarat or India.

2. Complex Interactions: The relationships between food security, social capital, and gender are multifaceted. Capturing every nuance might be challenging, leading to oversimplifications.