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Fluoride Mitigation In Ethiopia

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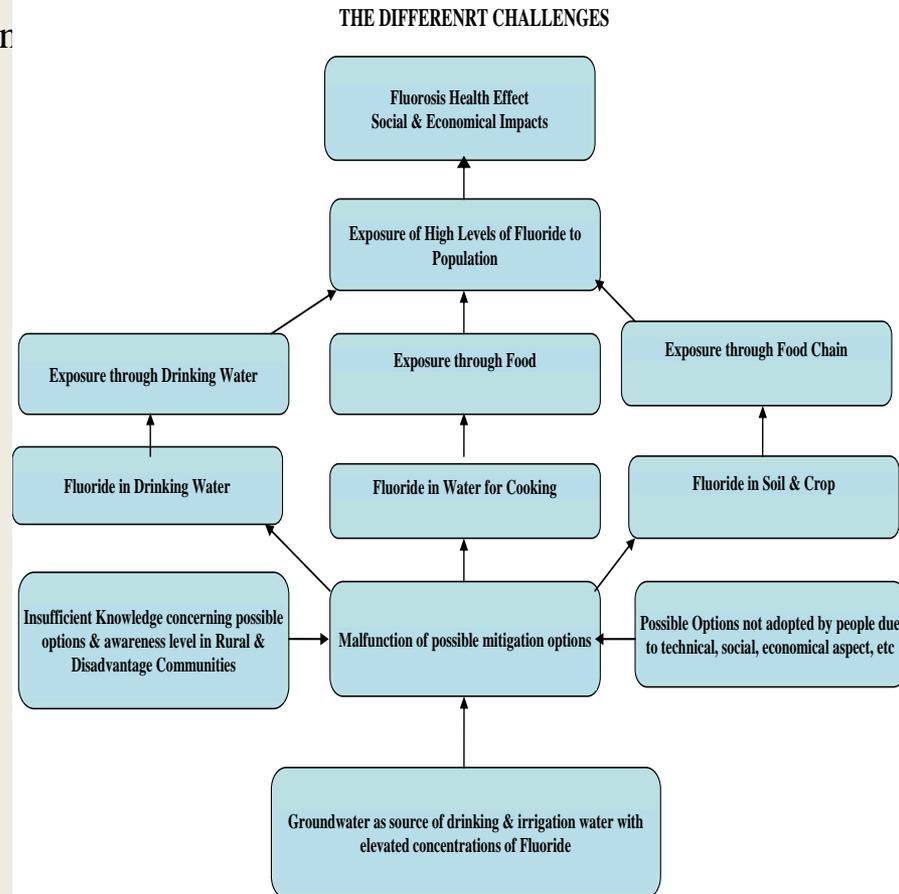
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Coordinator



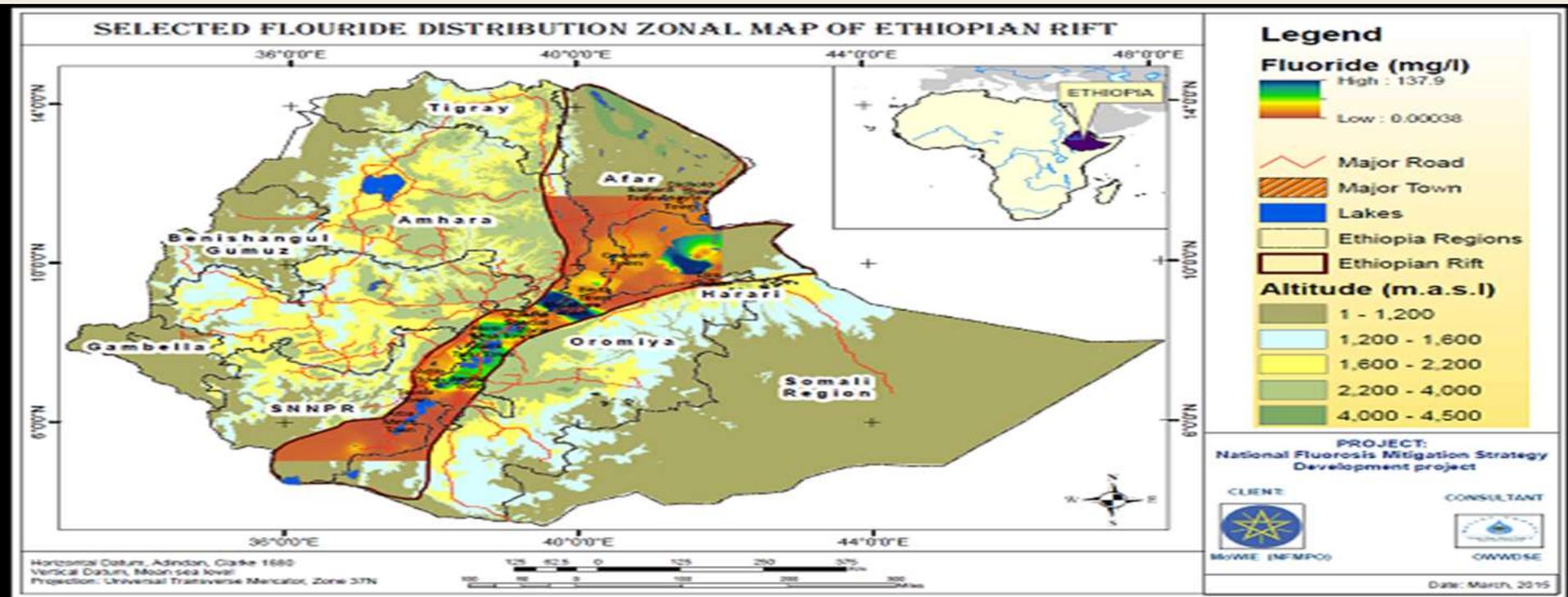
BRIEF HISTORY OF THE PROJECT

- Fluorosis Mitigation Project Office (**NFMPO**) upon the recommendation by NFMSC in **2009. IFMP**
- Mapping of fluoride and Fluorosis
- Provision of alternative safe water
- Adoption appropriate technology for fluoride removal both at community and household levels
- Strengthening institutional capacity for Fluorosis mitigation
- Creation of awareness at all levels on fluoride and Fluorosis
- research and development on Fluorosis mitigation focus on solving the problem
- Establishing systems for efficient M&E, and

EXPOSURE PATHWAYS FOR FLUORIDE IN ETHIOPIAN RIFT VALLEY, USED FOR TACKLING



MAGNITUDE OF THE FLUORIDE PROBLEM IN ETHIOPIAN RIFT VALLEY



1. In Rift Valley water sources, **fluoride concentration varies from 0.5 to 264 mg/l and identified to be up to 26 mg/l in drinking water sources**
2. **Over 40%** of deep and shallow wells and springs have fluoride levels above the maximum permissible level
3. **Over 80%** of the children in the rift valley have developed varying degrees of dental Fluorosis.



Distribution of potentially and highly affected population affected by fluorosis by Woreda in the rift valley regions of Ethiopia

Regions	Name of most affected woredas	Potentially affected estimated population	Highly affected estimated population	Estimated total population at risk of fluoride
Oromia	Arsi-Negele, Ziway, Meki, Alem Tena, Adama (Nazareth), Wonji, Methara, Shashmene, Lome, Siraro, Liben, Boset, Bora, Adami Tulu-Jido Kombolcha, Shala, and Ziway Dugda	5,011,058	1,788,853	6,799,911
SNNPR	Halaba, Gurage, Hadiya, Hawassa Zuria, Duguna-Fango, Maraqqo, Silte, Lanfuro	4,587,645	927,918	5,515,563
Afar and Adjacent Areas of Somali	Afdera, Melka Worer-Amibara, Gewane, Asaiyata, Dubti, Iwa, and Yalo, Afdem, Degahabur, Mulo and Qabridehar	-	526,685	526,685
Total	31 Woredas	9,598,703	3,243,456	12,842,159



Health Effects of Fluorosis

- **Fluorosis affected all segments of population** irrespective of age, gender, and the socio-economic status
- Population using **water from sources with high concentration of fluoride (>1.5mg/L)** are being suffering from varying degrees of dental and skeletal Fluorosis.
- people in the affected areas have been complaining **back and joint pain, skeletal deformity, psychological (feeling shame) and social problems.**



Victim of Skeletal Fluorosis

- **Urgi Danbal:-** In total he expended about 2600 birr for one hectare of farmland to harvest teff.
- Sometimes he faces problem of food shortage; that is suffered from food security problem.



The Problem of Fluorosis and Women

- Almost exclusively, fetching of water both for drinking and other domestic purposes are the responsibility of the women in both rural and urban areas;
- Some were suffering from skeletal Fluorosis and **could not perform their household domestic activities;**
- Their **beauty and aesthetic values** were also lowered as a result of dental Fluorosis; and most of the **female are ashamed of their fluoride affected teeth;**
- Therefore, water supply projects will contribute to the improvement of their life as well as to alleviating their workload.



Efforts Made To Solve Safe Water Supply Problem

- A lot of efforts have been made to address water supply problems in the rift valley of Ethiopia both by the Federal Government, Regional Water Bureaus and a number of WaSH actors.
- Finding alternative safe water source from the highlands and within the rift with pipeline;
- Establishing community & household based fluoride treatment technologies;
- Establishing household water treatment techniques



Major Challenges And Gaps in Mitigating Fluorosis

- The effect of fluoride cannot be observed immediately,
- Lack of adequate attention to health risk of fluoride at all level
- health care institutions have no protocols and laboratory facilities for diagnosis and preventive care for people affected Fluorosis.
- High fluoride content in the groundwater and in some cases surface waters (lakes) of the region;
- Limited capacity (financial) to develop safe and alternative water source;



Major Challenges And Gaps in Mitigating Fluorosis

- Lack of trained manpower at different administrative levels; Knowledge gaps;
- Lack of proper management and operation and maintenance;
- lack of integrating fluorosis mitigation activities in WASH implementation program
- Gap in Identification of appropriate mitigation measures is a challenging



Awareness Issue and Attention of Relevant Bodies to Control The Problem of Fluorosis

- communities have **good level of awareness** -dental and skeletal Fluorosis being one of the major health problem in their area, and able to associate the problem with sources of water
- Whereas, none of the woredas in the four regions considered Fluorosis as critical health problem and not categorized under reportable non-communicable diseases.



Possible proposal for strategic direction of WASH (undertaking)

- health care institutions must have protocols and laboratory facilities for diagnosis and preventive care for people affected Fluorosis.
- capacity building and financial support is important to mitigate Fluorosis
- Strong integration of fluorosis mitigation activities in WASH implementation program is important and must be part of WASH program
- Nutrition intervention for people affected by Fluorosis is another critical mitigation option



Thank You



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