BIOFORTIFICATION AND FORTIFICATION: PREVENTING CHRONIC MALNUTRITION

2 BILLION PEOPLE SUFFER FROM MICRONUTRIENT DEFICIENCIES

- **Micronutrient deficiencies** – a leading cause of intellectual disability, blindness in children, maternal death in childbirth. It affects 2 billion people and contributes to 5% loss of GDP globally.
- **Biofortification and fortification** can provide the required **micronutrients** (such as zinc, iron, vitamin A, iodine, folate).

REQUIRED VITAMINS FOR:

<table>
<thead>
<tr>
<th>cognitive function</th>
<th>eye health</th>
<th>physical growth</th>
<th>immune system</th>
<th>healthy pregnancy</th>
<th>mental health</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iodine</td>
<td>Vitamin A</td>
<td>Zinc</td>
<td>Iodine</td>
<td>Iodine &amp; Folic Acid</td>
<td>Zinc</td>
</tr>
</tbody>
</table>

Zinc, Iron, Vitamin A, Iodine, Folate

USE CASE:
Over 1 million children die each year due to Vitamin A and zinc deficiencies

BIOFORTIFICATION

Breeding seed parents with desirable traits, e.g. drought tolerance, high yield to develop high-micronutrient biofortified child varieties.

Only conventional crop breeding and agronomic techniques are used.

- Biofortified foods help fill daily nutrient requirements
- **Cost-effective and sustainable**: one time investment in seeds, recurring costs are low
- **Higher yields** and ability to **adjust to climate change**

HIGH RETURN ON INVESTMENT:

$1 INVESTED IN BIOFORTIFICATION GENERATES USD $17 IN RETURN from reduced illnesses, increased earnings and work productivity.

BIOFORTIFICATION RESULTS: **REDUCTION OF VITAMIN A DEFICIENCY** by up to **22%** via Vitamin A sweet potato (reduction of illness, mortality).
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FORTIFICATION

Adding micronutrients during food processing

- Large scale food fortification provides a substantial increase in nutrients (including iron, folate, vitamin A) to vulnerable populations

ADVANTAGES OF FOOD FORTIFICATION:

- easily integrated into daily life
- low cost
- incorporates local private sector's products

SUCCESS STORY ON IODINE:

Since 1990, the proportion of households consuming iodized salt worldwide increased from less than 20% to 88% and the number of countries with iodine deficiency (the world’s leading cause of preventable mental impairment) decreased from over 110 to 20

HIGH RETURN ON INVESTMENT:

$1 INVESTED IN FOOD FORTIFICATION GENERATES USD $27 IN RETURN

FORTIFICATION RESULTS: REDUCTION OF CHRONIC MALNUTRITION

HOW TO SOLVE TOGETHER?

We are calling private sector and social development actors to help us fund and execute biofortification and fortification solutions which have an incredibly high return on investment and which open doors for the young generations to thrive.

Return on Investment (ROI) / low annual cost per person:

- IODIZED SALT: $30 / $0.05
- FOLIC ACID in WHEAT FLOUR: $46 / $0.12
- IRON in MAIZE MEAL: $8 / $0.12

COMMON FORTIFIED FOODS:

maize meal, wheat flour, salt, rice, cooking oil