

Innovations and Best Practices in PHAP:

Building the FAO-Thiaroye Processing Technique (FTT)'s upscaling in small-scale fisheries from lessons learned in success story technological interventions

**High Level Ministerial Dialogue to Support Post-harvest Loss Reduction and
Agro-Processing (PHAP), 21-22 November 2017, Abidjan, Cote d'Ivoire**

**Dr. Yvette Diei-Ouadi
FAO Fishery Officer**

CONTENTS

- Overview of the fisheries and aquaculture sector in Africa
- Two success story interventions under different context of technology innovation
- Lessons learned in support of the upscaling of the FAO-Thiaroye processing technique (FTT) in small-scale fisheries
- Conclusion

Tapping on the potential of small-scale fisheries for a more vibrant fisheries and aquaculture sector in Africa

- Value of African fisheries is estimated at \$24 billion or **1.26 percent** of the GDP of all African countries
- About 200 millions people eat fish in Africa annually, their main source of animal proteins and other valuable nutrients
- Fisheries and aquaculture sector provides livelihoods for more than **12.3 million people**
- **Small-scale fisheries** employ the bulk of the fishers in the sector, their outputs predominantly supply **domestic and regional markets**
 - **Women and youth** dynamically involved
- About **27.3 percent** of the 12.3 mill people engaged are **women**, of whom **91.5% in fish processing**
- **Smoking and drying constitute the overriding fish processing methods in SSF**
 - Food security & Nutrition
 - Direct and ancillary jobs creation
 - Equitable development/poverty eradication



SELECTED SNAPSHOT CASES IN AFRICA



The snowball effect of the drying rack introduction in SSF in Burundi



The FTT in the

- export fish processing business in Cote d'Ivoire, Gambia, Togo, etc.
- farmed tilapia value chain in Tanzania

SIMPLE FISH-DRYING RACKS IMPROVE LIVELIHOODS AND NUTRITION

THE ISSUE

ACCORDING TO BURUNDI'S NATIONAL AGRICULTURE INVESTMENT PLAN

60%

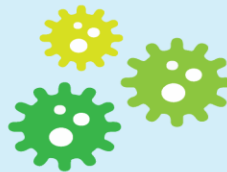
PROTEIN DEFICIENCY

LACK OF INFRASTRUCTURE



LITTLE POSSIBILITY OF INLAND CONSUMERS ACCESSING FRESH FISH

WOMEN OFTEN DRIED FISH IN THE SAND



UNHYGIENIC



POST-HARVEST LOSS (E.G. SLOW DRYING TIME EXPOSURE)

THE FISH



Lake Tanganyika sprat (*Stolothrissa tanganyicae*)
Sardine-like variety known locally as **ndagala**

FAO PROJECT: LAUNCHED 2004

PROVIDED TECHNICAL AND CAPACITY SUPPORT IN RACK-DRYING



SHORT TERM PROJECT ENDED IN 2005

IMPACTS OF RACK-DRYING METHOD

- 1 NDAGALA = LONGER SHELF-LIFE
- 2 TRANSPORT TO INLAND MARKETS

- RACK-DRIED FISH FETCHED OVER DOUBLE THE PRICE THAN SAND-DRIED

- GENERATED NEW EMPLOYMENT OPPORTUNITIES
- EMPOWERED WOMEN - EXPANDED MARKETS
- DISTRIBUTED NUTRITIOUS FISH TO WIDER AREA

OUTCOMES

IN 2004

AVERAGE OF

500

WOMEN SAND-DRYING NDAGALA

NOW

AROUND

2,000



PEOPLE ARE DIRECTLY INVOLVED IN RACK-DRYING

ESTIMATED OVER 12,000



FAMILY MEMBERS ARE FED FROM RACK-DRYING

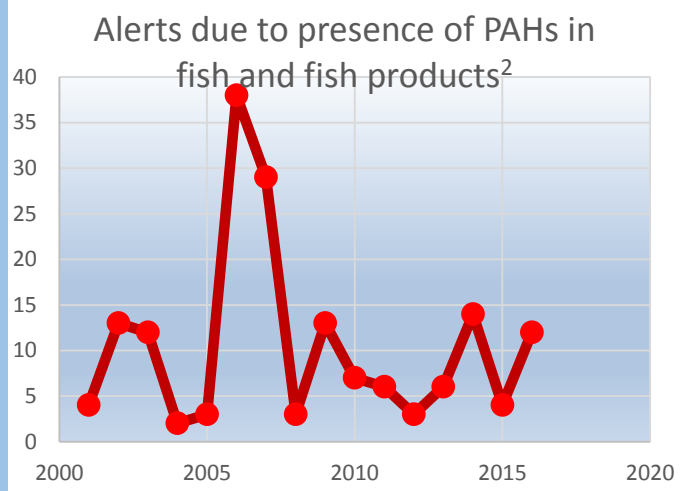
AN INCREASE OF

300%

LOCAL COMMUNITIES CONTINUE TO USE THE ACQUIRED TECHNIQUE, BUILDING RAISED RACKS AND INCREASING THE SHORE AREA FOR DRYING PURPOSES



SMALL INVESTMENT FROM AN 18-MONTH FAO PROJECT CONTINUES TO SUPPORT BURUNDI FISHING VILLAGES NINE YEARS LATER



High level of PAHs and Rejections



Lost in Market Shares



Meet the EU limits on PAH4 and benzo(a)pyrene



What drove the pervasive and sustainable best practices in these 2 scenarios (small & medium scale fisheries)?

- **Positive market response** drives incentives that are conducive
 - rapid return on investment,
 - encourage self-investment,
 - support sustainability of best practices
- **Ensuring consistently** that market access **requirements are met**



Upfront investment



Raised rack for optimal fish drying, 250kg capacity

- 300-350\$
- 4-5 years lifespan
- 2-3 times less drying time, stone-free products compared to drying on bare ground



The FAO-Thiaroye processing technique 300-400 kg capacity

- **1,500-1,600\$ for a full set**
- **400-600\$ to retrofit** an existing kiln
- + 10 years lifespan
- Smoking, drying, baking, storage



The Dafing-FTT, 100-150kg capacity:

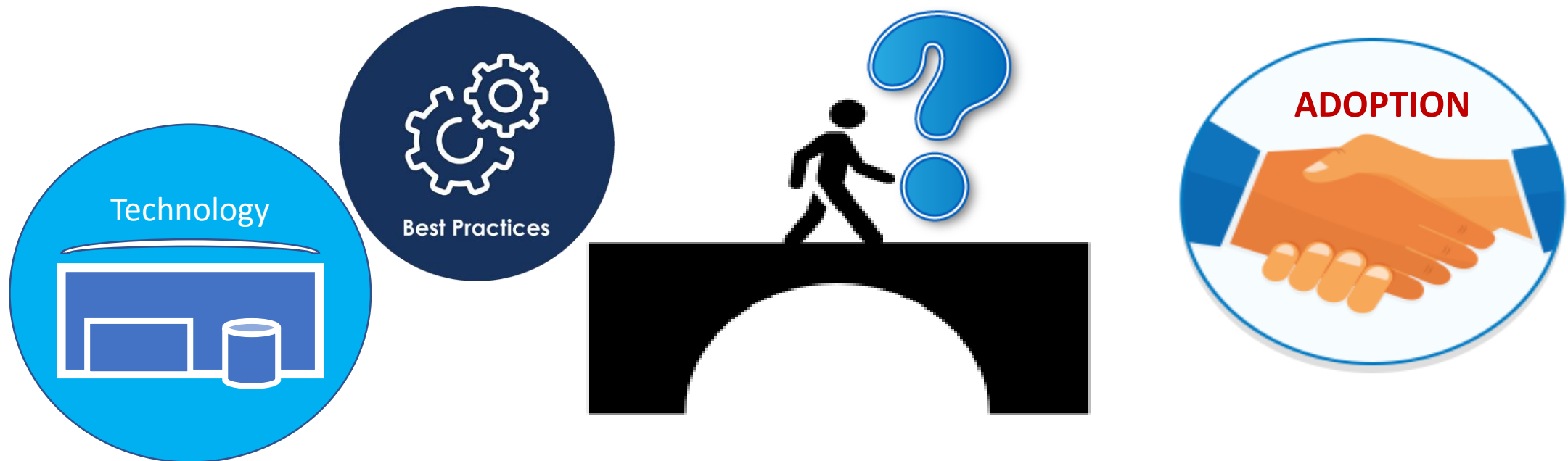
- **400-500\$ full set**
- **150-200\$ to retrofit** an improved Dafing

How can lessons learned serve in effectively upscaling of FTT in small-scale fisheries (1)

- Following the success in medium-scale fisheries, FTT introduced for the 1st time in small-scale fisheries in 2013
- Adoption of this new technology by several SSA countries (currently a dozen), while some others are contemplating doing so
- Profitability of FTT kilns assessed in Cote d'Ivoire based on the net present value (NPV) method
 - Besides the technical, social and environmental soundness, the FTT kilns are **financially and economically profitable** with an investment of less than 0.86 or less than 2.85 million CFAF
 - NPV amounts to more than 10.35 million and close to CFAF 7.64 million, respectively. This corresponds to an internal rate of return (IRR) of 34.9% and 31.7% based on a discounting rate of 10% over a period of 10 years
 - **geographical, socio-demographic & health-related determinants for kilns adoption, can be outweighed only by the economic incentives**

How can lessons learned serve in effectively upscaling the FTT in small-scale fisheries (2)?

- The economic viability is greatly dependent on the target market's response and consistency in best practices enforcement by competent authorities
- **Key considerations for a viable business case**, particularly in the context of African small-scale fisheries



How can lessons learned serve in effectively upscaling the FTT in small-scale fisheries (3)?

Three Key Factors

1. Market or Consumer's Preparedness
2. Regulatory Framework and Enforcement (support facilities, inspection staff)
3. Fishers as entrepreneurs

Income /
Consumer
Trust

- Adoption
- Ownership
- Self-replication (sustainable & wider scale dissemination)

Enabling Measures

- Savings & Credits
- Market segmentation,
- Product differentiation, Linkage

- Group dynamics
- Knowledge / Technical skill
- Literacy

- Gender-sensitive Infrastructure & services
- Other Support services
 - Public safety
 - Household/Community awareness to lift gender imbalance

- Communication for consumer's informed choice and behaviour change

Shared
responsibility /
Access to
technology

Clusters/
Innovation
Leaders

How effectively and sustainably we scale up the FTT in SSF in Africa to meet healthy, wealthy and equitable fisheries objective, will greatly depend on the **business approach, policy actions** and how inclusive we are in addressing the **market incentives**



Thank you very much!