Food and Agriculture Organization

An SMS Based System for Monitoring of Progressive Development of Plant Diseases: A Pilot Initiative for Surveillance of Wheat Rusts in Turkey

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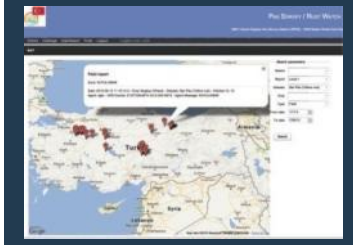
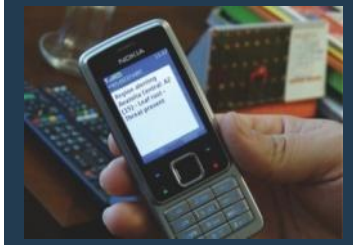
Agriculture Officer

Plant Production and Protection Division



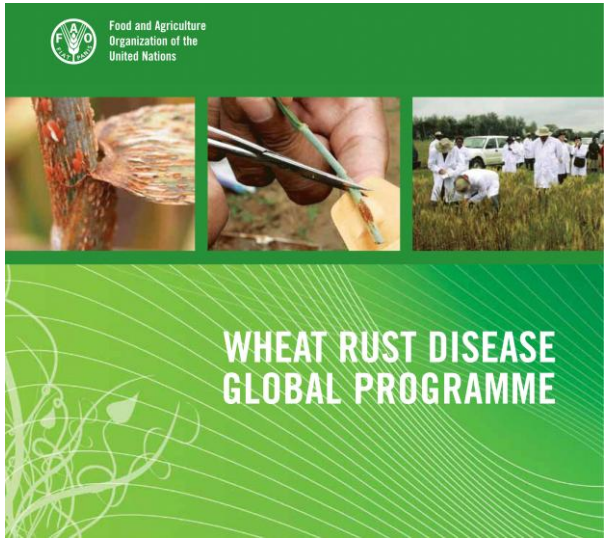


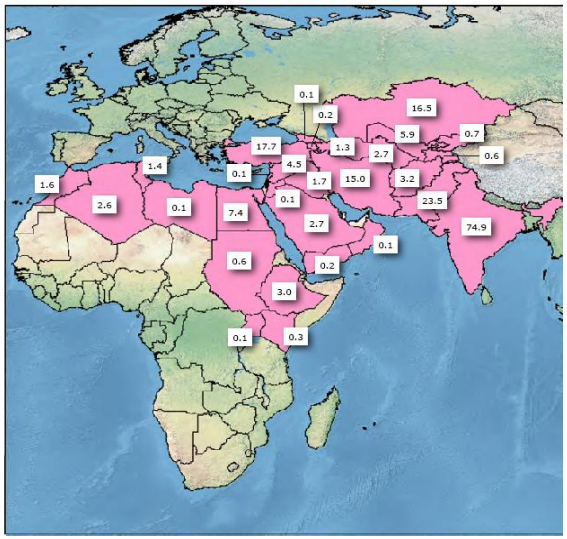
FOOD CHAIN CRISIS
Management Framework

Background

Wheat Rust Disease Global Programme

- Prevention and preparedness & management
- Technical support
- International collaboration



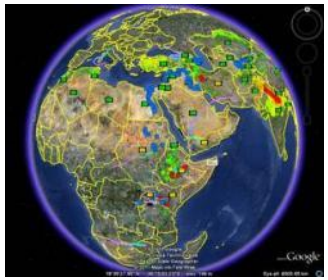


Background

Components of the programme:

- Preparedness and contingency **planning**
- **Surveillance** and early warning,
- **Variety** registration and recommendation,
- **Seed** multiplication and distribution,
- Training of farmers for integrated **management** of rusts by **farmers,**
- **Regional** collaboration

Global rust monitoring system


- ✓ Support to Global Rust Monitoring System runs through BGRI
- ✓ Collaboration with CIMMYT, ICARDA and AARHUS University on Global Rust Monitoring system
- ✓ Support to countries for **field** surveys
- ✓ Rapid surveillance for emergency **response** !

Why SMS?

- Rapid response requires
  - **Rapid** access to field information,
  - Effective **coordination** and planning,
  - **Wide** coverage for monitoring,
  - Quick **warning** and decision making,
  - **Field** data
    - Rapid
    - Reliable

- SMS → Rapid, wide coverage

Structure of the system

- SMS gateway tool and software,
- An operation unit based at Ministry,
- Network of
  - extension officers
  - research institutes

Pilot activity:

- Central Anatolia
- Six districts from five provinces:
  - Ankara, Konya, Eskisehir, Sivas and Kayseri

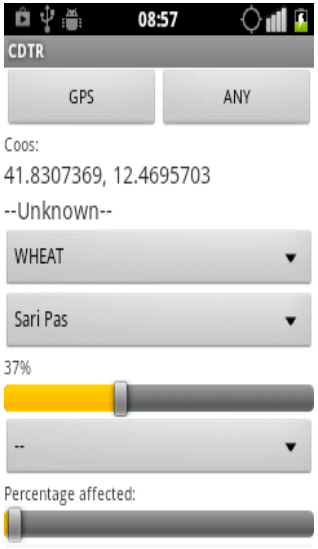
Procedures

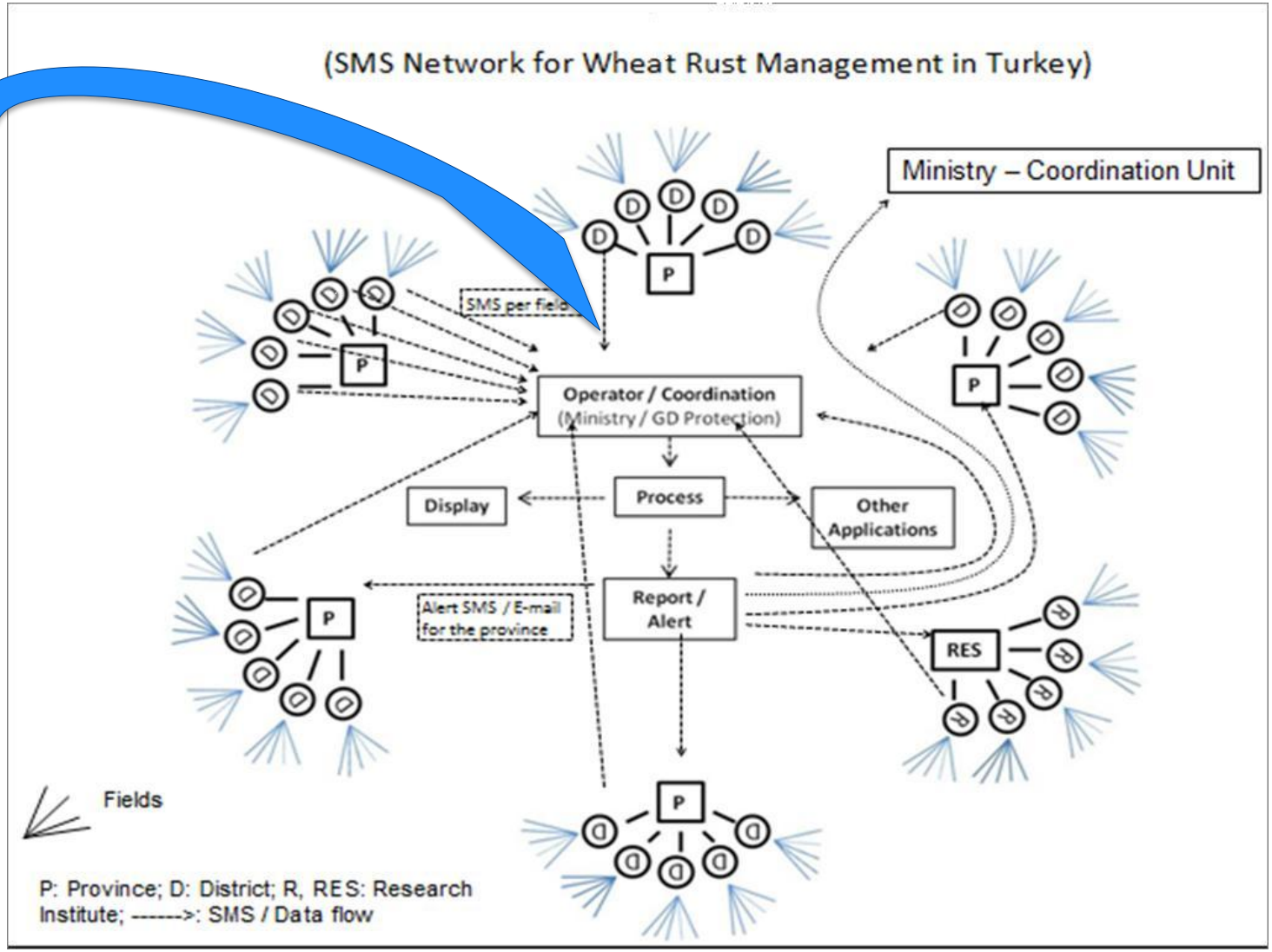
- SMSs sent from each district twice a week with the following information:

- **Presence** and species of rusts in fields,
- **Percentage** of infected plants,
- Any other relevant **information** such as field size or name of the cultivar.

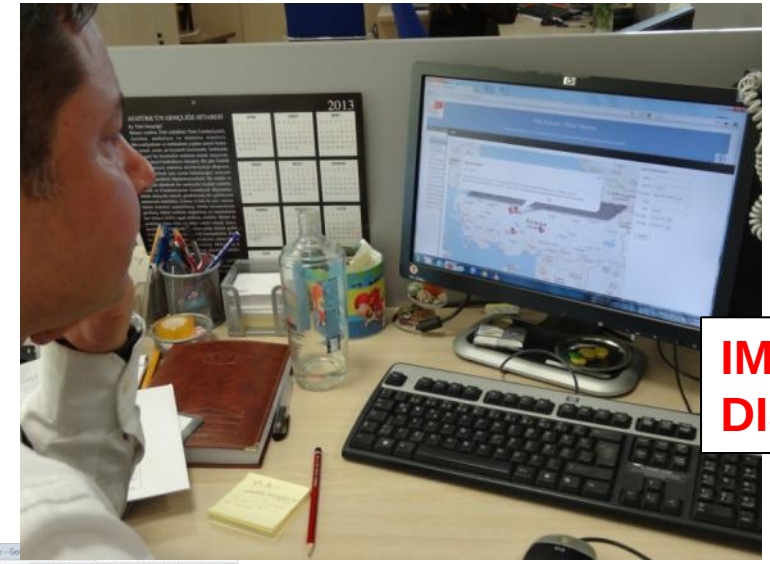
The system

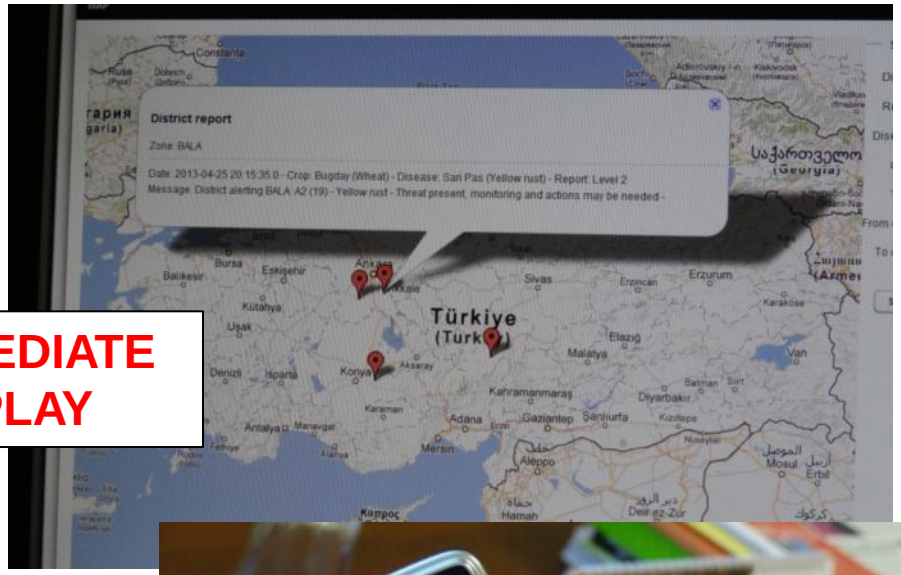
SMS: YR20



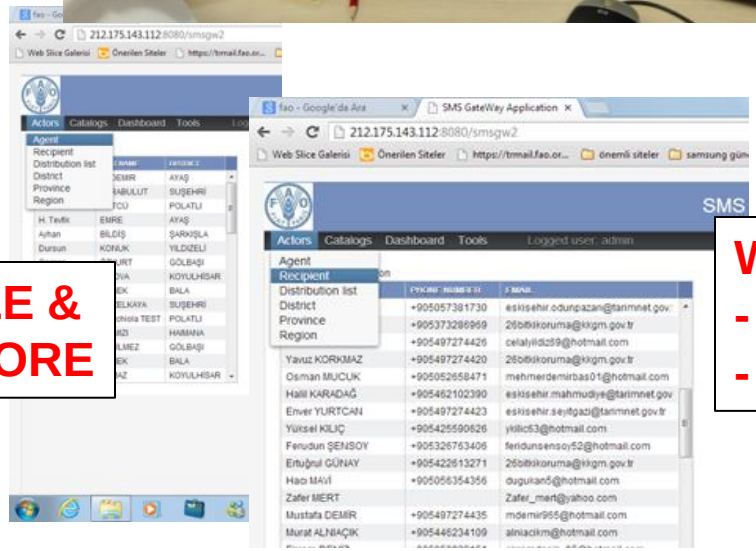


Findings

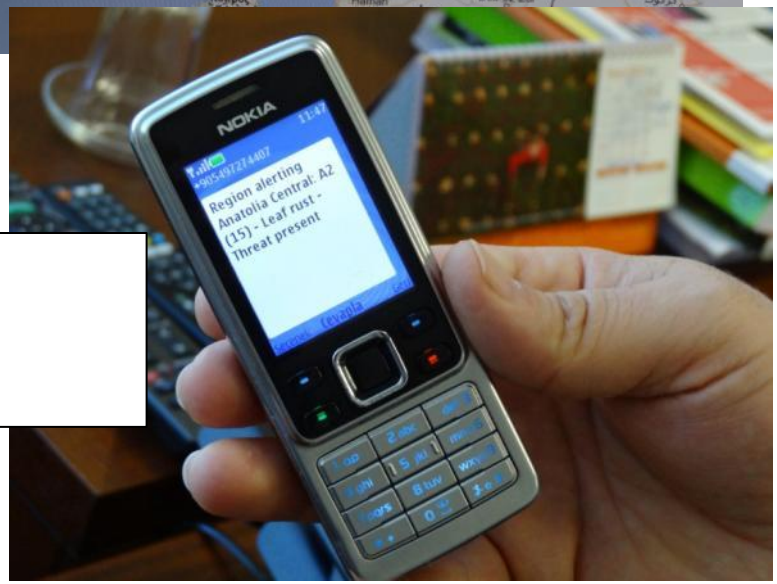




IMMEDIATE DISPLAY



FILE & STORE



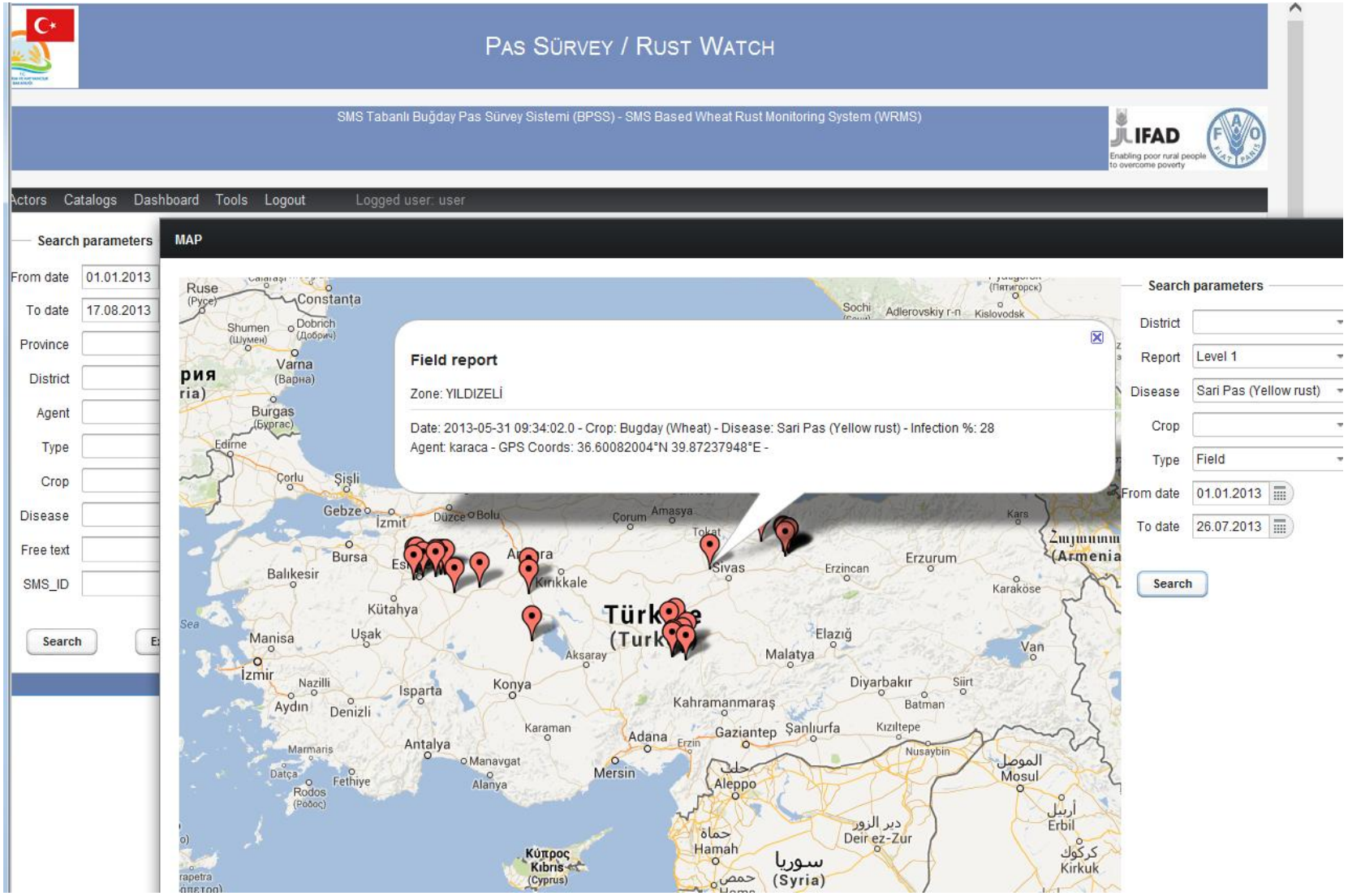
WARNINGS:
- **SMS**
- **MAIL**

Findings

- The SMS reports facilitated **monitoring** of disease development through the season.
- Yellow rust initiated in **11%** of the fields,
- More frequent in districts of Susehri, Tomarza, Pinarbasi, Alpu and Cihanbeyli.
- Infections remained relatively **low** through the season,
- Only **3 fields** reached the 5-14% incidence category and one 40-100%.

Yellow rust development

Search / reporting tool



Functions of the system

- Utilization of **extension** offices for surveillance,
- **Rapid** access to field data,
- **Exchange** of information among extension, offices, operation unit and relevant authorities,
- Early **warning** and decision-making tool to facilitate timely interventions,
- Assists **research** institutions to design their scientific surveys in the most appropriate locations and directions, monitoring and management systems.

Future prospects

- **Adaptation** to individual needs possible,
- Can include **other** pests and diseases,
- Can be considered as a component of wider crop **monitoring** systems,
- Effective tool for rapid **response,**
- Information sharing and **collaboration** between research and extension institutions.

Acknowledgements

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