



سلطة المياه الفلسطينية  
Palestinian Water Authority



السلطة الوطنية الفلسطينية  
Palestinian National Authority

## Mediterranean Joint Process Water Monitoring working group meeting

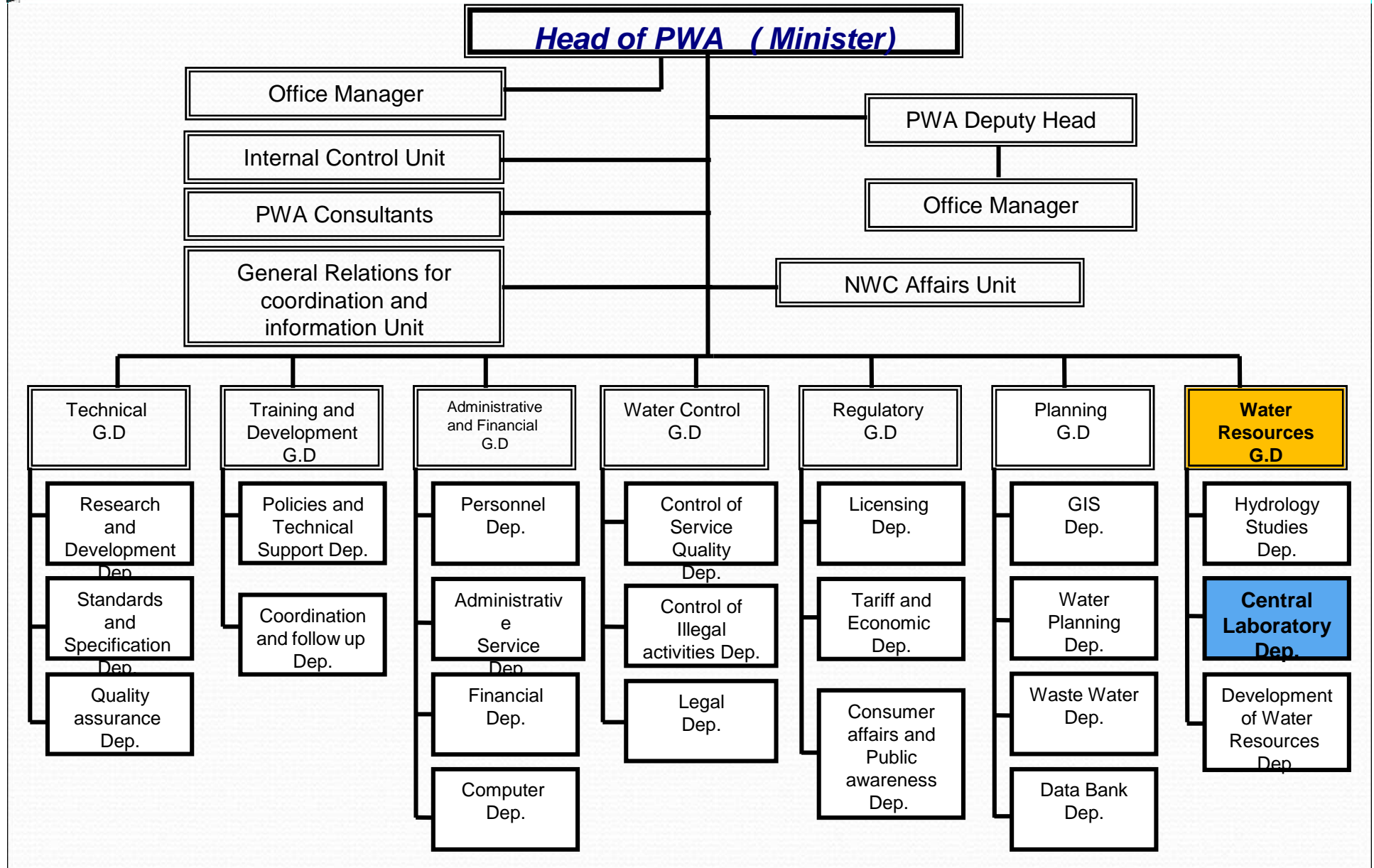
### Palestinian Case

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Msc. Water Quality Management

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Madrid - Spain



# Structure of the Institution (PWA)



## Main tasks of the Institution

The Palestinian Water Authority (PWA) is by its by-laws a governmental institution with an independent status with its own budget and follows the President of the Palestinian National Authority and has a commissioner who is appointed by its President. **PWA is responsible for the management of the most scarce and vital sources for sustaining life, for promoting development, and for maintaining the environment in Palestine (Water)**

## Legal basis and policy documents

**PWA Strategy:** the strategy consists of the following key elements:

- Secure Palestinian Water rights
- Strengthen National policies and regulations
- Build institutional capacity and develop human resources
- Improve information services and assessment of water resources
- Regulate and co-ordinate integrated water and wastewater investment and operations
- Enforce water pollution control and production of water resources
- Build public awareness and participation
- Promote regional and international cooperation

## Legal basis and policy documents

### PWA Policy: The main principles of the Palestinian water policy

- All sources of water should be public property
- Water has a unique value for human survival and health, and all citizens have a right to water of good quality for personal consumption and costs then can afford
- Water supply for domestic, industrial, and agricultural development must be compatible with the available water resources and based on sustainable development
- Water has social environmental and economic values. Therefore the damage resulting from the destruction of its usefulness (pollution) should be paid by the party causing (polluter), polluter pays principle.
- The development of the water resources must be coordinated on the national level, and carried out on the appropriate level.
- The national water sector management should be carried out by one responsible body; with the separation of institutional responsibility for policy and regularity functions from service delivery functions.

# Introduction to Water Quality Monitoring

- Water Quality Monitoring is an important factor that many of the Authorities, Service providers and NGO's are neglecting in Palestine.
- As PWA is consider the regulator for the water Sector, monitoring of the water quality for the water resources is one of its priorities as indicated in the water law to assure protection of the water resources and contamination prediction.
- For that, The PWA has established a Central Water Quality Laboratory to cope with its mandate.



## Main Objectives:

Monitor the water quality of resources in the West Bank (domestic and agricultural) through the Conduction of Chemical and Biological analysis and providing recommendations to concerned departments within PWA.

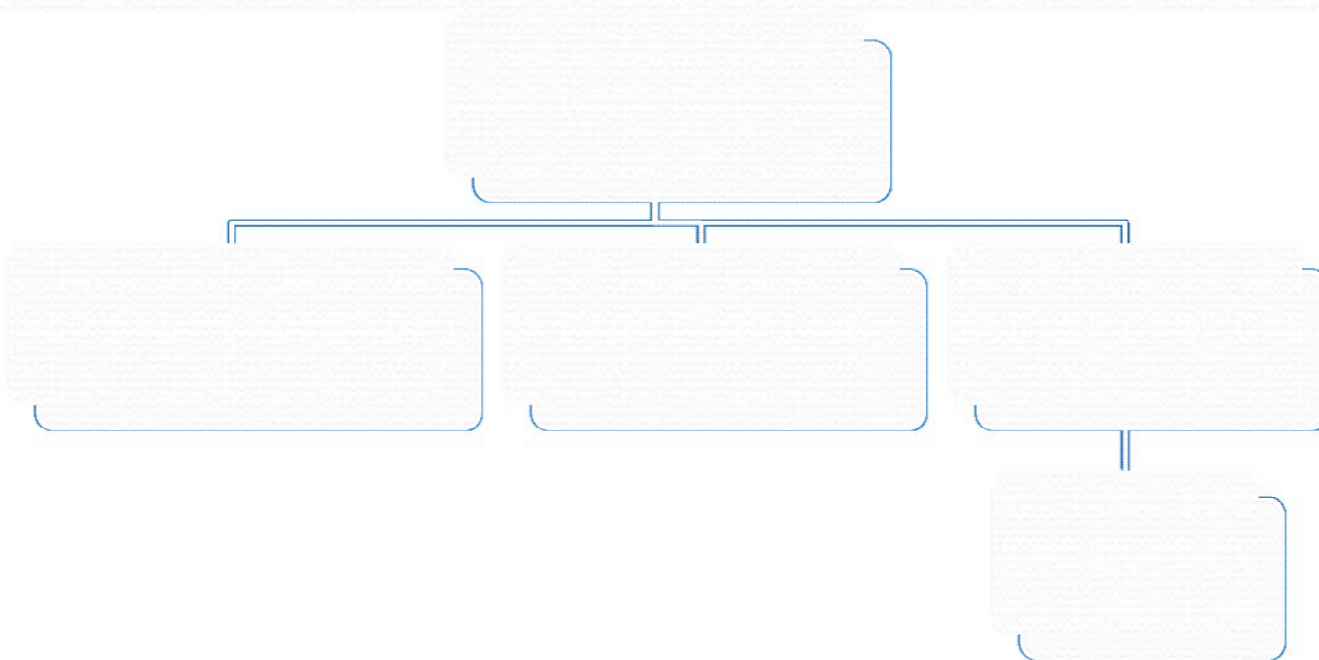
In cooperation with the Ministry of Health and local service providers insure the provision of adequate and safe water at household level in accordance with the national potable water standards.

Provide ad-hoc support and on site water testing in emergency



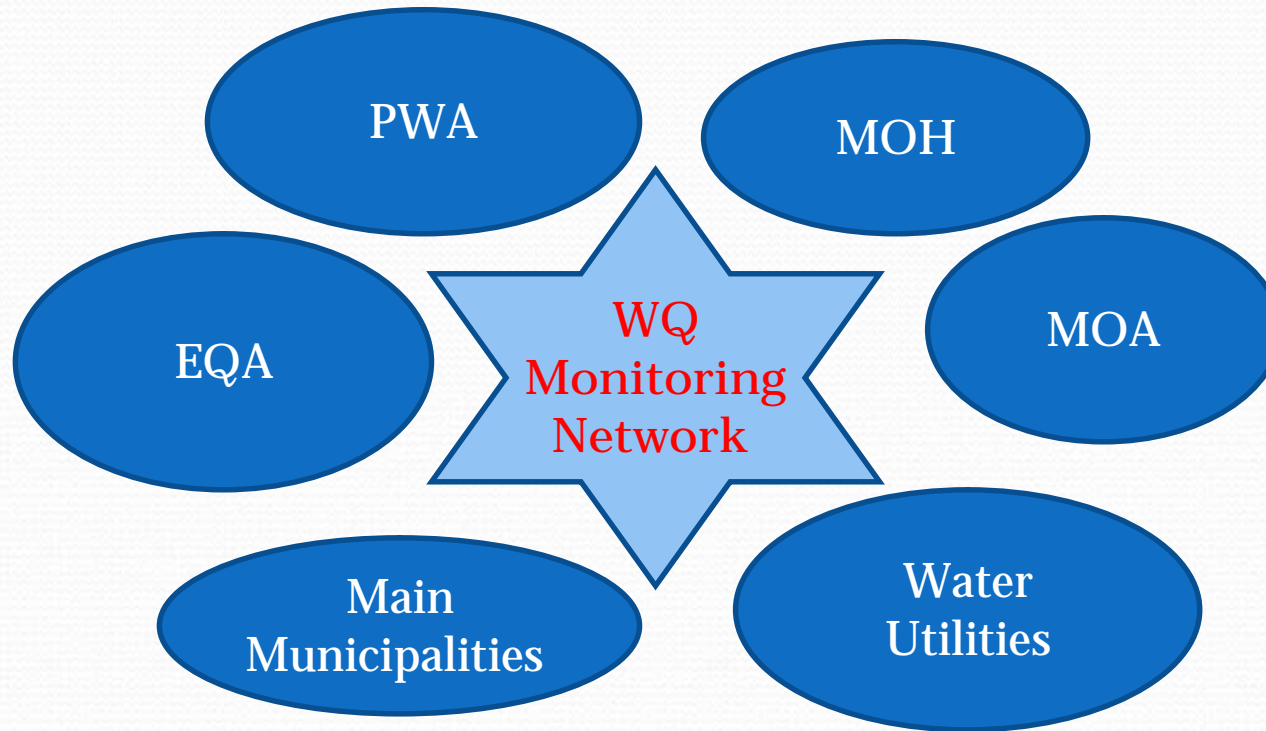
- **Where Do we stand today?**

- PWA water quality lab is developing and implementing periodical surveillance program for water resources. The lab feeds PWA and concerned national institutions with needed information for planning.
- The lab team is responsible for collecting samples and performing analysis from the different water resources including agricultural and potable.





# Who is monitoring Water Quality ?



# Who is Monitoring Water Quality

## Palestinian Water Authority (PWA)

### Monitor all water resources in the West Bank

**Agricultural and Domestic: Main water resources in Palestine is Ground water**

**Wells and springs**

### Frequency

**Twice / year**

**Before the rainy season October – December (Autumn)**

**After the rainy season April – June (Spring)**

### Parameters

**Agricultural Resources – Major Chemical (Anions and Cations)**

**Domestic Resources -**

**Major Chemical (Anions and Cations)**

**Microbiological :Total and Faecal Coliforms TPC and other test upon request**

## **Who is Monitoring Water Quality \_ cont.**

### **Ministry of Health (MOH)**

**Monitor mainly at the consumer tap for Health related parameters**

**Samples are collected from HH, Restaurants, Reservoirs, schools, clinics**

**Analyzed for Total and Feecal Coliforms**

**Samples collected from Domestic water resources are analyzed for the TDS, Chloride, Nitrate and some other Chemical Parameters**

**MOH District offices collect samples and send to the central lab in Ramallah**

**Collection on daily basis but locations are according to set schedule**

## Who is Monitoring Water Quality \_ cont.

### **Ministry of Agriculture (MOA)**

Responsible about the Agricultural wells and spring  
They depend on the Palestinian Water Authority for the water quality monitoring.

If they want to analyze for certain project: they analyze for the EC , Chloride and Nitrate

### **Environmental Quality Authority (EQA)**

They don't have a regular monitoring program,  
Checking water quality (Bacteriological) for some resources incase of pollution.

## Who is Monitoring Water Quality \_ cont.

### Water Service Providers (WSP) and Utilities

Responsible about monitoring WQ for the Water System under their responsibility (from the source to the consumer) to assure that the consumer receive safe clean water. WSP Monitor mainly for Health related parameters

#### Free Chlorine test :

- Main Wells & Reservoirs - Daily.
- Distribution Lines Ends - Weekly.
- Consumers : Daily random samples.

#### Physical Tests :

- Main Wells & Reservoirs – Twice Monthly.

#### Microbiological Tests : ( Total Coliform & Fecal Coliform):

- Main Wells & Reservoirs – Weekly.
- Consumers - Weekly.
- Restaurants, food Stores, and Factories – Weekly
- According to complaints from consumers.
- According to cooperation protocol with Health Ministry

#### **Chemical Tests:**

Main Wells & Reservoirs – Quarterly.

Consumers : Random samples according to complaints.

## Who is Monitoring Water Quality \_ cont.

### UNRWA

Responsible about monitoring WQ **Inside the Refugee Camps**, (from the source to the consumer), UNRWA mainly monitor for Health related parameters mainly Total and Faecal Coliforms

#### Free Chlorine test :

- Main Wells & Reservoirs - Daily.

- 

#### Microbiological Tests : ( Total Coliform & Faecal Coliform):

- Main Wells & Reservoirs – Weekly.

- Consumers - Weekly.

- 

#### **Chemical Tests:**

Consumers : Random samples according to complaints.

## Water Quality of the Tankered Water

- Many conducted analysis shows that the Tankered water is contaminated by total coliforms. Some shows fecal contamination.

Due to:

- filling from un safe, non secure water resource.
- Non Maintained Tankers.
- Lack of Awareness about Hyena Practices.
- Lack of Chlorination .

## Water Quality of the Cisterns

- All un-served communities use Cisterns as water storage . Results shows that high contamination with total and fecal coliforms were found in many localities who depend mainly on Cisterns.
- No chlorination is applied

## • Where we want to go?

- Expand the periodic surveillance program to cover the overall water resources in the West Bank (quantitative and qualitative).
- Insure coherent collaboration with the local service providers and the MoH (*To avoid Duplication in the work and to assure coving all communities*).
- Developing the Scientific research in order to serve and support the achievement of PWA / Water sector goals .
- Capacity building of the lab staff through training programs that helps fulfilling the mandate and achieving the PWA goals.
- Develop the lab /WSP Labs to be accredited according to international standards.
- Networking: Internally and international



## Recommendations

- Develop Labs capacities (human resources and instrumentation) in order to cope with their responsibilities
- Building national WQ network information system (we started to have a LIMS which will be a web base data base)
- Improving the existing monitoring programs to include more parameters as Heavy metals and Organics
- Start the water Safety Plan for each district (piloting at the first step)

- **Challenges:**
- Developing and upgrading the PWA lab and the lab staff capacity to enhance its ability to perform the required analysis.
- Develop local WSP labs, capable to perform analysis locally.
- Wastewater flowing from settlements and contaminate the Palestinian land and water resources.
- Enhance the labs capacity to perform sewage water analysis.

## Frequency of sampling for water samples for the distribution network (Microbiological analysis)

No of samples at each run	Frequency	No. of population
2	Once / Month	حتى 1000 نسمة
4	Once / Month	1001-5000
6	Once / Month	5001-10,000
8	Once / Month	10,001 - 20,000
5	Once/ two weeks	20,001 - 30,000
6	Once/ two weeks	30,001 - 40,000
7	Once/ two weeks	40,001 - 50,000
4	Weekly	50,001 - 70,000
6	Weekly	70,001 - 90,000
4	Twice/week	90,001- 110,000
5	Twice/week	110,001 - 140,000
4	Three times / week	140,001 - 170,000
5	Three times / week	170,001 - 200,000
4	five times / week	200,001 - 250,000
5	five times / week	250,001- 300,000
6	five times / week	300,001 - 400,000
7	five times / week	400,001 - 500,000
8	five times / week	فوق 500,000 نسمة

*Israeli Public Health Regulations, Sanitary Quality of Drinking Water), 1974, Consolidated Version 2000*

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يوم المياه العالمي  
World Water Day  
2010  
مياه نظيفة لعالم صحي  
Clean Water for a Healthy World

## ما تلوثه اليوم تشربه غداً



بدعم من:

يونسف

الوكالة الفرنسية  
للتنمية الدولية  
afcd  
AGENCE FRANÇAISE  
DE DÉVELOPPEMENT

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22 March آذار ٢٢

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## لنحمي مياهنا العذبة من التلوث



يونسف | اfd | الوكالة الفرنسية  
للتنمية الدولية | بدعم من

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## مياه نظيفة لعالم صحي Clean Water for a Healthy World



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.... ماء ذا جودة مضمونة ....

نعمل على مراقبته باستمرار في مختبراتنا



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