

3. アラビア半島の人為的水資源

3. Artificial water sources in Arabian Peninsula

アラビア半島の人為的な水資源と言えば、「54 章 造水・電力 (Chapter 54 Water Production / Electric Generation)」で述べた蒸留水と廃水処理水です。蒸留水は、1970 年代にドバイの Emirate Golf の開業の為に使われたことは有りますが、灌漑用水として使うのは費用的にも資源的には余り相応しいとは思いませんが、水耕栽培や垂直栽培などの高機能の農業では、特に新鮮な状態の直接、人々が食するような農作物には使われています。

Artificial water resources in Arabian Peninsula are primarily represented by distilled water and treated municipal wastewater. Distilled water was utilized in 1970s during the development of Emirates Golf in Dubai. While it's not considered economically or environmentally efficient for general agricultural irrigation, it is well-suited for high-tech farming methods such as hydroponics and vertical cultivation—especially when growing fresh produce intended for raw consumption, like lettuce sold at supermarkets that can be eaten directly without washing.

都市排水処理水は直接灌漑用水として使われることもありますが、主流派涸れ谷に流して涸れ谷地下水の涵養にされることが一般的です。沙漠の河川や涸れ谷は、土管を半割にして土砂が詰まっている状態です。このことはナイル川やチグリス。ユーフラテス川の様な大河であっても湿地帯を除けば植栽に在るのは川岸川ほんの数メートルで川底や川岸が水を通さないまでに細かい土砂で埋め込まれています。

On the other hand, treated municipal wastewater is sometimes used directly for irrigation, but more commonly it is discharged into dry riverbeds (wadis) to support groundwater recharge. Riverbeds and wadis in the desert regions of Arabia resemble half-buried pipelines filled with sediment, making the ground highly impermeable. This condition is observed even in major rivers like Nile and Tigris / Euphrates, where, outside of wetlands, vegetation exists only within a narrow band along the banks. The riverbeds and banks are packed with fine sediment, which prevents water from penetrating.

この為、涸れ谷に放流した水の殆どは涸れ谷から流れ出すことは無く、涸れ谷の河原の涵養水として川原の土砂の間隙をゆっくりと下流へと下って行きます。その過程で廃水処理水は自然に濾過され、灌漑用水として十分に使える水質に改善されます。

As a result, most of the water released into these wadis does not flow beyond their boundaries. Instead, it seeps slowly through the gaps in the gravel and sediment along the riverbed, gradually moving downstream. During this process, the treated wastewater undergoes natural filtration and is improved in quality—making it suitable for agricultural irrigation.

