

Key impacts in different production systems - a scientific perspective



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Fresh Water Rainbow Trout production



World production: \approx 0.5 mio. ton

Value : \approx 1.5 bill. USD

Current key impacts of FW Trout farming

- **Water use**
- **Escapees**
- **Habitat conversion**
- **Discharges**
- **Fish health/Welfare**
- **Feed ingredients**
- **Energy efficiency and carbon foot print**
- **Predator control**
- **Social/community**

Freshwater Trout production systems

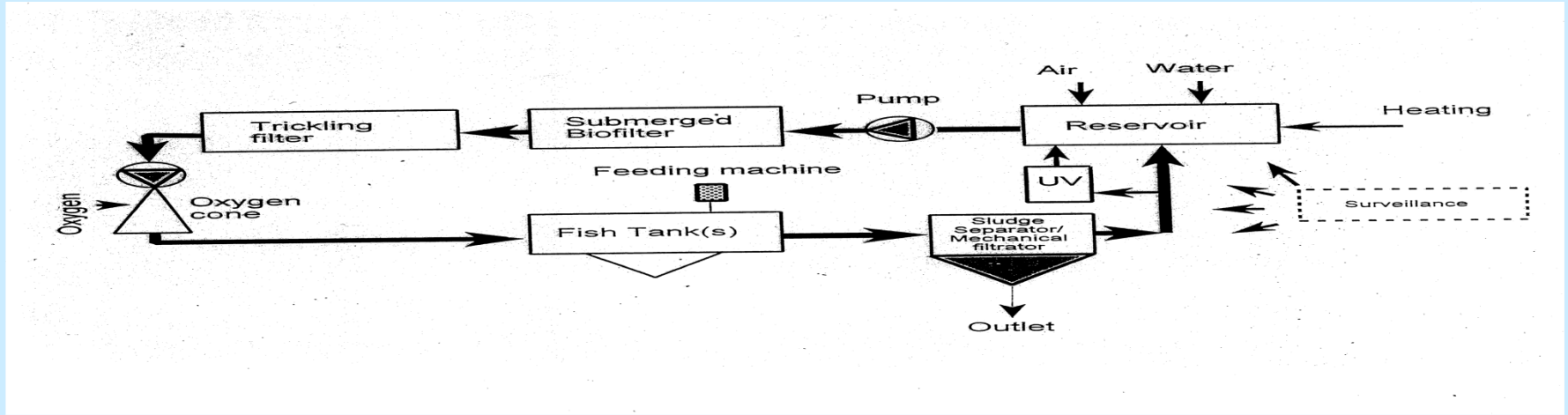


Flow-through systems

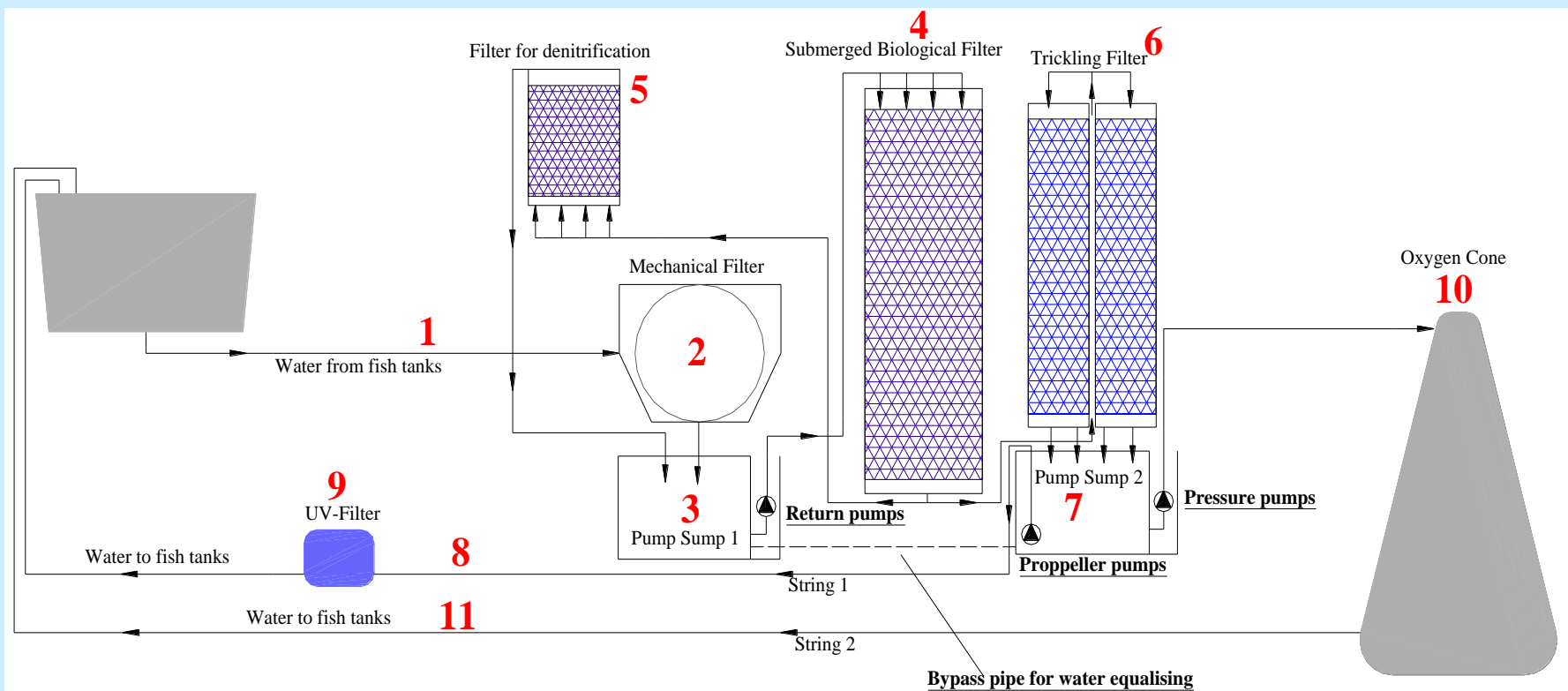


Freshwater Trout production systems

Recirculation Technology systems



Intensive recirculation system



- **Low water consumption**
- **Low \approx "zero" environmental impact**
- **Independency on river water**

Water resource

Flow through system



Issues:

- **High water intake**
- **Risk of "dead stretch"**
- **Impact on the fauna**
- **Fluctuating water quality**
- **Low energy consumption**

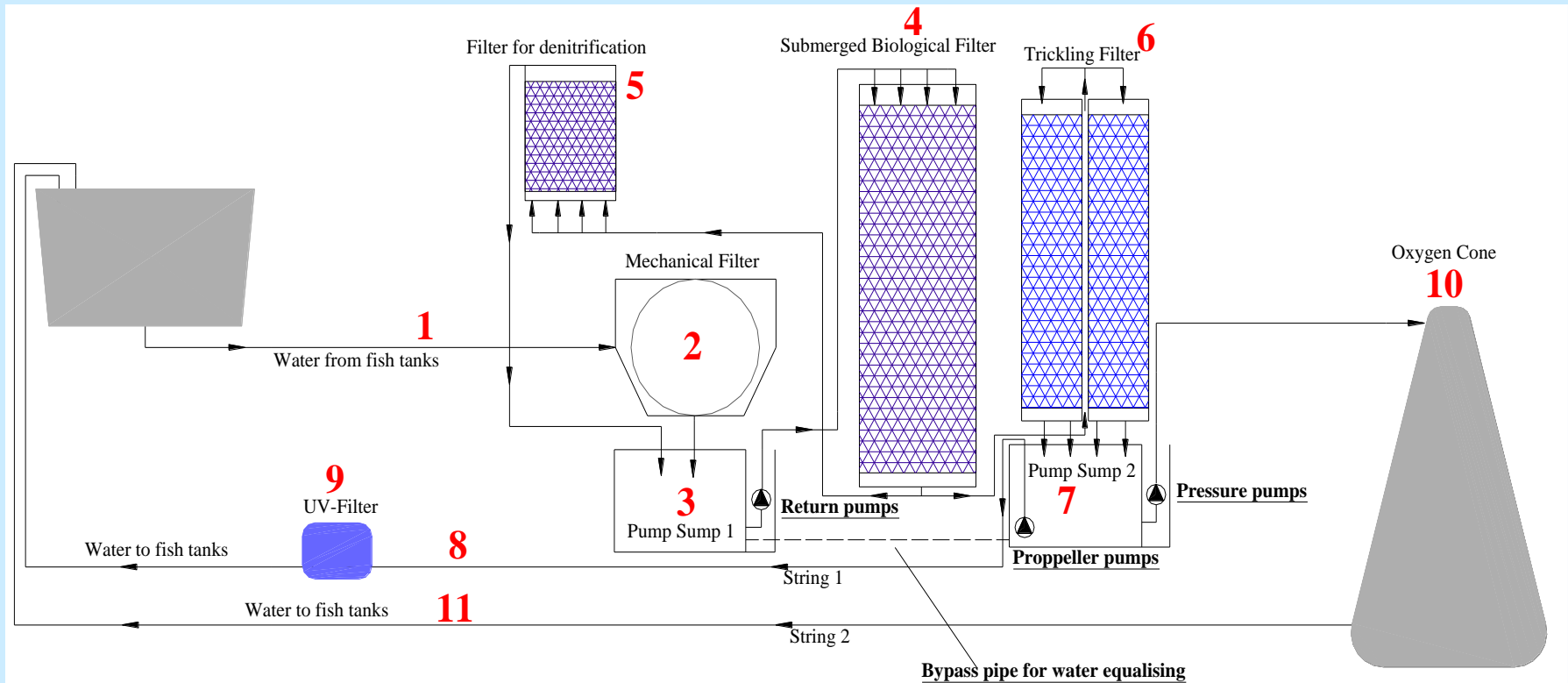
Application of Recirculation Technology



Issues:

- **Less water intake**
- **Less dependent on river water**
- **Less impact on the fauna**

Re-use / Recycling of water



- **Recirculation degree (Re-use \approx 95 - 99 %)**
- **Recycling, i.e. % water exchange of vol/day (10-20 %)**
- **"Overall intensive": 1/s/kg feed**

Environment

Flow through system



Issues:

- Sedimentation
- Var. water quality?
- Impact on the fauna?

Application of Recirculation Technology



Application of Recirculation Technology

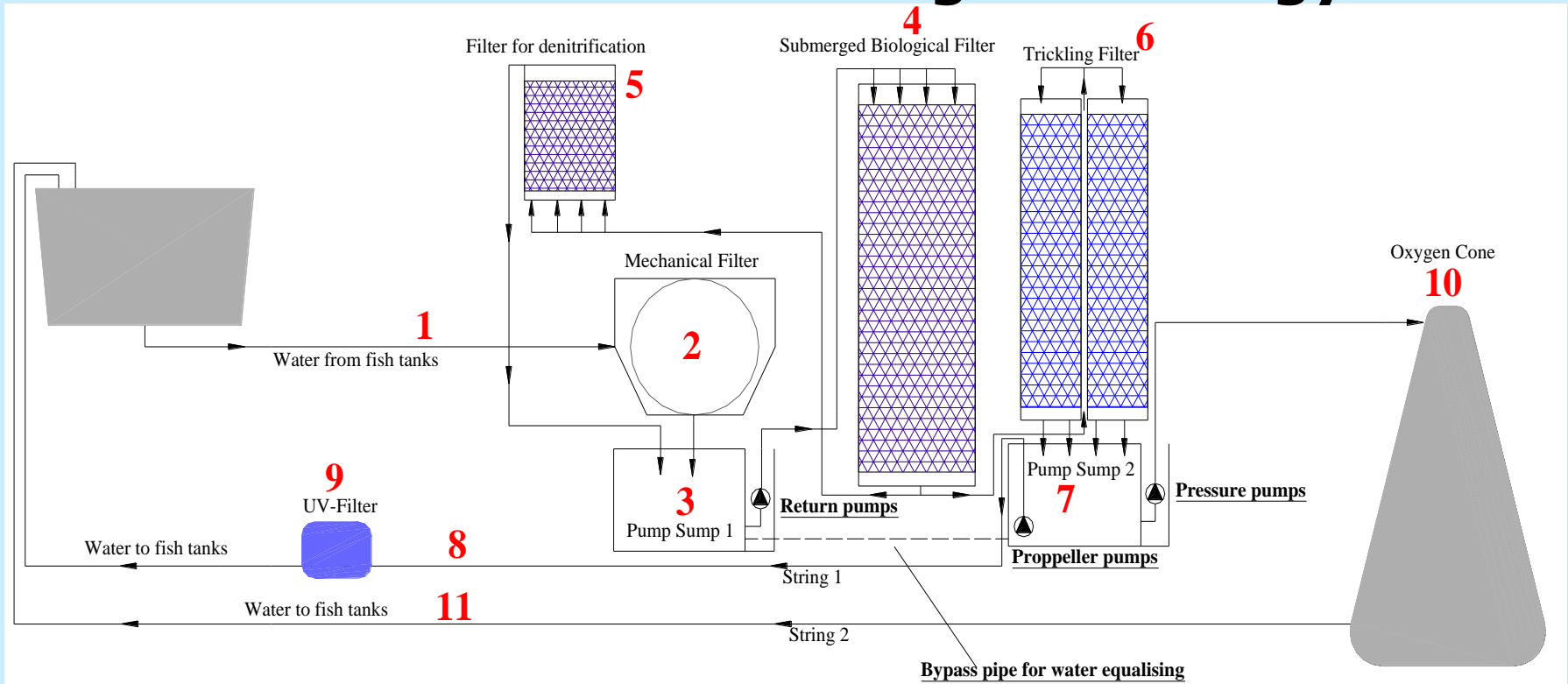


Issues:

- Less environmental impact
- Less impact on the fauna
- More stable water quality
- **Energy consuming (pumps)**
- **CO₂ emission**
- Less area

Environment

Recirculated Fish Rearing Technology



- Regulation and control of the internal environment (stability)
- Reducing invasive fish diseases from surroundings
- Improved working conditions
- **Risc of accumulation of NH_3 , NO_2 , CO_2**
- **Management / Back up**

A photograph of a sunset over a field. The sky is filled with soft, wispy clouds in shades of blue, purple, and pink, with a bright orange and yellow glow from the setting sun on the horizon. The foreground is a dark, silhouetted field of tall grasses.

THANK YOU FOR YOUR ATTENTION