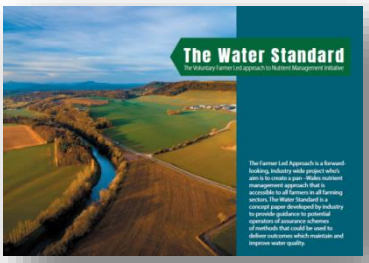

The Voluntary Farmer Led Approach project presentation notes.

Slide 1. Why water…

Illustrates extreme weather events – Flooding and drought impacts in Australia

Global Water Scarcity – 1/3rd of the globe will be water stressed by 2025

China – 80% of China's ground water supply is unfit for human contact. This affects up to 680 million people's water supplies.

Spain – soft fruit growers cover regions with glass to grow food for export, without providing water to the environment.

Slide 2. Project outline.

Proposal

Explore options to develop a farmer led approach to delivery of water quality improvements, and reduce nutrient enrichments to water courses caused by N, P, and soil particles.

Review existing guidance on best practice and identify needs by agriculture going forward

Stakeholder engagement on current schemes, deliverables and advice and guidance being given

Awareness raising of Wales's farming and environmental landscape at a local level

Identify on farm benefits for working on water quality on farm, and at a catchment scale

Review accreditation / recognition opportunities

Maximising natural resources on farms across Wales

Fewer agricultural pollution incidents and less diffuse pollution

Better **water, soil, air and habitat** quality

Making **better use** of **nutrients** on farm and within the industry

Developing methods to **combat climate change**

Developing **market advantages** by demonstrating **sustainable production standards**

Slide 3. BOD levels

Biochemical Oxygen Demand (BOD) slide.

Biochemical Oxygen Demand (BOD) is used to show the risk of causing pollution from organic wastes. BOD is a measure (in mg/l) of the amount of oxygen needed by micro-organisms to break down organic material.
Examples of typical BOD levels in mg/l are given below:

WASTE TYPE	**BOD LEVEL Mg/l**
Treated Domestic Sewage	20-60
Raw Domestic Sewage	300-400
Dilute Dairy Parlour and Yard Washings (Dirty Water)	1000-5000
Liquid Waste from Slurry Stores	1000-12000
Liquid Sewage Sludge	10000-20000
Cattle Slurry	10000-20000
Pig Slurry	20000-30000
Silage Effluent	30000-80000
Milk	140000

Source:
http://adlib.everysite.co.uk/adlib/defra/content.aspx?id=000IL3890W.16NTBWZUINWYL

Slide 4. – Nitrogen content

Slurry generation from a dairy herd amounts to the following;

In a 5 month housing period = **8m^3** per cow or **19m^3** per cow per year

In addition to this Parlour washings: **20 – 30** litres per cow per day

= **11m^3** per cow per year

Plus Rainwater: 100 cow shed produces **1200m^3** per year – That is approximately **4** swimming pools worth of water and = **12m^3** per cow per year.

Slide 5. Managing risks

The Water Standard identifies environmental, social and economic benefits of managing risk, and provides solutions which deliver multiple opportunities. This allows farmers to identify drivers which deliver multiple benefits to environment and water.

A toolbox of solutions is required to enable farmers to capture these risks and opportunities easily are required, so supporting farmers in:

1. Identifying risk of nutrient losses on farm
2. Identifying sustainable best management practices to address risks
3. Quantifying production and environmental improvement goals
4. Developing a realistic timescale to deliver affordability and business resilience.

Slide 6 / 7. The Water Standard

How the standard works

The Standard is intended to provide a method of evidencing behavioural change and good practice, so promoting continual improvement of water quality. This includes:

- Promote good practice in managing fertilisers and soils
- Encourage farmers to take reasonable precautions to prevent diffuse pollution from runoff or soil erosion
- document - informs farmers of the method and means to identify risk on farm
- embracing all sources of pollution and quantifying the risk.
- Risks - Once identified, the farmer is then able to take action to manage the risks in an appropriate manner.
- Actions may vary from very basic, to quite complex dependent on the level of risk and the farmers' ability to identify, fund, and deliver.

Slide 8. 5 Steps.

STEP 1: GATHER AND UNDERSTAND

Using the water standard criteria to identify existing on farm activities / infrastructure which are might have an effect on water quality

STEP 2: COMMIT AND PLAN

Select which criteria you would like to address

STEP 3: IMPLEMENT

Designing solutions – through the provision of a solutions provided by the tool box farmers can identify the costs associated with delivering elements of the water standard

STEP 4: EVALUATE

Uploading of data to an authorised 'data sharing' system – paper based and electronic.

STEP 5: COMMUNICATE & DISCLOSE

Share evidence with the regulator to create a 'working relationship' on managing risks, timescales for delivery, and evidencing of work completed, benefits delivered and compliance with regulation and the water standard.

Slide 9. Opportunities

Solutions

- Clean and dirty water separation – yard and on farm
- Diffuse pollution mitigation – hard standing / water course crossings / water supply / constructed wetland buffer strips
- Environmental Buffer strips – arable and watercourses
- Mapping – nutrient management plan
- Grassland / crop measures – growth, nutrient uptake, inputs, outputs
- Environmental enhancements – woodland, water, grassland and moor

Measure and manage

- Water quality monitoring
- On farm mapping – risk mitigation and environmental enhancements
- Management plans
- Cost benefit / business improvements
- Short / medium / long term business and environment plans

Slide 10. - Soil health all year round

Things to consider

- Plan ahead – Nutrient management planning, Soil sampling / cropping rotations / lime, Manure management plan, Environment accident and emergency plan

- Times of year
- Weather conditions
- Soil conditions
- Cropping
- Short and long term impacts – costs / benefits associated with that
- Drivers – Social, economic, environmental

Slide 11.

Utilising our soil and water within Wales puts us in a resilient position to market this finite resource – water, and to create a landscape which doesn't deplete others environments by growing food in unsuitable climatic conditions where water is scarce.