

**Water Principles and Criteria**  
**DRAFT – For Discussion Purposes Only**

**RSB**

**Principle 9: Water**

**Principle 9. Biofuel operations shall maintain or enhance the quality and quantity of surface and ground water resources, and respect prior formal or customary water rights.**

**Criterion 9.a Biofuel operations shall respect the existing water rights of local and indigenous communities.**

**Operators who must comply:** Feedstock Producer, Feedstock Processor and Biofuel Producer.

**Minimum requirements**

The use of water for biofuel operations shall not be at the expense of the water needed by the communities that rely on the same water source(s) for subsistence.

Water resources under legitimate dispute shall not be used for biofuel operations until any legitimate disputes have been settled through negotiated agreements with affected stakeholders following a free, prior and informed consent enabling process.

For others than small-scale operators:

As part of the Environmental and Social Impact Assessment (ESIA) outlined in Principle 2, a consultative process that includes water regulatory authorities, local water experts, community members, and indigenous peoples relying on the same water table or watercourse for their needs shall be used to identify downstream or groundwater users and determine the formal or customary water rights that exist, as well as critical aquifer recharge areas, replenishment capacities of local water tables, watercourses, and ecosystem needs. The potential impacts of biofuel operations on any of these aspects shall be evaluated, and any negative impacts mitigated.

Any formal or customary water rights that exist shall be respected and protected through the water management plan (see 9.b) to prevent infringement of such rights. No modification of the existing rights can happen without the Free Prior and Informed Consent of the parties affected.

For small-scale operators only:

The potential impacts of biofuel operations on water availability within the local community and ecosystems shall be assessed by the operator, and any negative impacts mitigated.

**Criterion 9.b Biofuel operations shall include a water management plan which aims to use water efficiently and to maintain or enhance the quality of the water resources that are used for biofuel operations.**

**Operators who must comply:** Feedstock Producer, Feedstock Processor, and Biofuel Producer.

**9.b.1 Minimum requirements**

Operators shall implement a water management plan.

The water management plan shall be made available to the public, unless limited by national law or international agreements on intellectual property.

The water management plan shall be consistent with local rainfall conditions not contradict any local or regional water management plans and include the neighbor areas, which receive direct runoff from the operation site. Any negative impact on these neighbor areas shall be mitigated.

## **Water Principles and Criteria**

### **DRAFT – For Discussion Purposes Only**

The operator shall undertake an annual monitoring of the success of the implementation of the water management plan.

#### **9.b.2 Progress requirements:**

The water management plan shall include steps for reusing or recycling waste water, appropriate to the scale and intensity of operation.

#### **Criterion 9.c Biofuel operations shall not contribute to the depletion of surface or groundwater resources beyond replenishment capacities.**

**Operators who must comply:** Feedstock Producer, Feedstock Processor and Biofuel Producer.

##### **9.c.1 Minimum requirements**

Water used for biofuel operations shall not be withdrawn beyond replenishment capacity of the water table, watercourse, or tank from which the water comes. The replenishment capacity shall be evaluated through the Scoping Exercise or the Environmental and Social Impact Assessment (Water Specialist guideline) outlined in Principle 2.

Based on the Scoping Exercise or the Environmental and Social Impact Assessment outlined in Principle 2 and the water management plan (9.b), the use and share of water resources (e.g. maximum volume to be annually withdrawn from the water table) for biofuel operations shall be defined in agreement with local experts and the community; any water user committees shall be consulted.

Irrigated biofuel crops and freshwater-intensive biofuel operations systems shall not be established in long-term freshwater-stressed areas, unless the implementation of:

- a. good practices or
- b. an adequate mitigation process that does not contradict other requirements in this standard ensures that the water level remains stable.

Operators shall not withdraw water from natural watercourses (e.g. a river) to an extent that modifies its natural trajectory or the physical, chemical and biological equilibrium it had before the beginning of operations.

##### **9.c.2 Progress requirements**

The Operator shall demonstrate commitment to the improvement of water efficiency over time through the implementation of water-saving practices, including but not limited to rain harvesting.

#### **Criterion 9.d Biofuel operations shall contribute to the enhancement or maintaining of the quality of the surface and groundwater resources.**

**Operators who must comply:** Feedstock Producer, Feedstock Processor and Biofuel Producer.

##### **9.d.1 Minimum requirements**

Biofuel operations shall not occur on a critical aquifer recharge area without a specific authorization from legal authorities.

Operators shall implement the best available practices which aim to maintain or enhance the quality of surface and ground water resources that are used for biofuel operations to the level deemed optimal for the local system for sustained water supply, ecosystem functioning and ecological services; this optimal level is to be defined, as part of the ESIA (PC2), through the consultation of local experts, communities and producers, taking into account local economic, climatic, hydrologic and ecologic conditions.

Adequate precautions shall be taken to contain effluents and avoid runoffs and contamination of surface and ground water resources, in particular from chemicals and biological agents.

Buffer zones shall be set between the operation site and surface or ground water resources.

#### **9.d.2 Progress requirements:**

10/21/2010

## **Water Principles and Criteria DRAFT – For Discussion Purposes Only**

For existing operations, degradation of water resources that existed prior to certification and for which the operator is directly accountable shall be reversed. Wherever applicable, operators (except small-scale operators) shall participate in projects that aim to improve water quality at a watershed scale.

Waste water or runoff that contains potential organic and mineral contaminants shall be treated or recycled to prevent any negative impact on humans, wildlife, and natural compartments (water, soil).

None of the chemicals recorded in the WHO's 1a and 1b lists, in Annex III of the Rotterdam Convention or in the Stockholm Convention on POPs shall be used within 3 years after certification (See full guidance on chemicals under principle 11).

---

### **CSBP**

This principle recognizes the vulnerability of both the available water supply and the quality of available water. Biomass production should not contribute to the depletion of ground or surface water supplies. When irrigation is necessary, the most efficient irrigation technology appropriate to the circumstance should be used.

**PRINCIPLE:** Biomass production shall maintain or improve surface water, groundwater, and aquatic ecosystems.

#### **Criterion 4.1 Water quality**

Maintain or improve surface and ground water quality.

#### **SILVER LEVEL INDICATORS for Water Quality**

##### **Indicator 4.1.S1 Integrated Resource Management Planning**

Program participant complies with a water management plan that addresses impacts to water quality, or complies with an existing plan meeting these objectives. The Plan customizes application rates of agrochemicals based on results from soil and plant tissue testing conducted as recommended by the NRCS.

##### **Indicator 4.1.S2 Erosion and sediment**

Program participant adopts conservation practices related to erosion control.

##### **Indicator 4.1.S3 Use of wastewater for irrigation**

Program participant tests wastewater (or receives documentation of testing conducted by provider) and treats waste water as needed before using it for irrigation.

##### **Indicator 4.1.S4 Trace elements in biosolids**

Program participant tests sludge and manure for heavy metals on a quarterly basis.

##### **Indicator 4.1.S5 Nitrogen**

Program participant uses a farm gate nitrogen budget to balance nitrogen entering and leaving operation with minimum amount of residual nitrogen left on operation, or adopts a comprehensive set of conservation practices.

##### **Indicator 4.1.S6 Phosphorus**

Program participant adopts a comprehensive set of conservation practices that address phosphorus management if fertilizer (organic or synthetic), sludges or manure is applied. Program participant takes steps necessary (either through reduced application or additional mitigation measures) to achieve a score of low or medium risk on the NRCS Phosphorus Index.

##### **Indicator 4.1.S7 Pesticide management**

Program participant adopts pest management methods that effectively control outbreaks of pests, diseases, fire, and introduction of invasive plants while not harming human health or the environment.

##### **Indicator 4.1.S8 Pesticide use**

**Water Principles and Criteria**  
**DRAFT – For Discussion Purposes Only**

Program participant mitigates for impacts on identified resource concerns (e.g., through erosion control, timing of application, etc.) when risk ratings on the Natural Resources Conservation Service Windows Pesticide Screening Tool (NRCS' WIN-PST) are intermediate or greater.

**Indicator 4.1.S9 Waste Disposal**

Program participant disposes of agricultural chemicals, containers, and liquid or solid non-organic wastes, including fuel and oil, off-site and in compliance with federal and state laws.

**Criterion 4.2 Water Quantity**

Irrigation and water management practices do not deplete the quantity of surface or ground water

**SILVER LEVEL INDICATORS Indicator 4.2.S1 Water management plan**

Program participant provides annual documentation of compliance with and updates to a water management plan that ensures efficient use of water in irrigation practices.

**Indicator 4.2.S4 Legal compliance**

Program participant demonstrates compliance with local water laws.

**Indicator 4.2.S3 Preventing Depletion**

In areas where the local water authority determines that ground or surface water is being depleted faster than it is being naturally replenished, program participant acquires existing water rights for any new irrigation, rather than securing new water rights from the local water authority, that would increase ground or surface water depletion rates.

**Indicator 4.2.S2. Use rights**

Program participant uses for irrigation only water for which they held legally valid use rights before commencement of biomass production or rights that have been subsequently acquired through legal means.

**Indicator 4.2.S5 Irrigation /Salinity**

Program participant demonstrates that salinity of soil is within acceptable parameters for the crop produced.

**Indicator 4.2.S6 Maximum water use per acre**

Program participant measures water use in a fashion that allows calculation of acre-feet of water applied per acre of cropland and ensures that water use per acre of cropland is consistent with the water use rates of the most efficient irrigation technology available in the area for the same or similar crops.

**Criterion 4.3 Aquatic ecosystems**

Preserve or enhance the functions and services of aquatic ecosystems.

**Indicator 4.3.S1 Integrated resource management plan**

Program participant complies with an integrated resource management plan that addresses the impact of operation on aquatic ecosystem health within the watershed.

**Indicator 4.3.S2 Stream flow**

Program participant adopts conservation practices considered sufficient to avoid negative impact on local stream flows and stream channel morphology, flood storage and conveyance capacity, and in-stream habitat conservation practices.

**Indicator 4.3.S3 Stream temperature**

Program participant adopts conservation practices considered sufficient to avoid negative impact on local stream temperature regimes, conservation practices

**Indicator 4.3.S4 Hypoxia**

Program participant does not increase the risk of hypoxia in downstream environments. (This indicator will be assumed to be met if silver level water quality indicators are met.)

**Indicator 4.3.S5 Wetlands**

Program participant prevents negative impact on local wetlands through adoption of relevant conservation practices and other measures as appropriate.

-----  
**RTRS**

**Principle 5: Good Agricultural Practice**

5.1 The quality and supply of surface and ground water is maintained or improved.

**Water Principles and Criteria**  
**DRAFT – For Discussion Purposes Only**

5.1.1 Good agricultural practices are implemented to minimize diffuse and localized impacts on surface and ground water quality from chemical residues, fertilizers, erosion or other sources and to promote aquifer recharge.

5.1.2 There is monitoring, appropriate to scale, to demonstrate that the practices are effective.

5.1.3 Any direct evidence of localized contamination of ground or surface water is reported to, and monitored in collaboration with local authorities.

5.1.4 Where irrigation is used, there is a documented procedure in place for applying best practices and acting according to legislation and best practice guidance (where this exists), and for measurement of water utilization.

Note: For group certification of small farms - Where irrigation is used for crops other than soy but is not done according to best practice, a plan is in place and is being implemented to improve practices. The group manager is responsible for documentation.

5.2 Natural vegetation areas around springs and along natural watercourses are maintained or re-established.

5.2.1 The location of all watercourses has been identified and mapped, including the status of the riparian vegetation.

5.2.2 Where natural vegetation in riparian areas has been removed there is a plan with a timetable for restoration which is being implemented.

5.2.3 Natural wetlands are not drained and native vegetation is maintained.

-----  
**RSPO**

Principle 4: Use of appropriate best practices by growers and millers

Criterion 4.4 Practices maintain the quality and availability of surface and ground water.

Indicators:

- An implemented water management plan.
- Protection of water courses and wetlands, including maintaining and restoring appropriate riparian buffer zones.
- Monitoring of effluent BOD.
- Monitoring of mill water use per tonne of FFB .

Guidance:

Growers and millers should address the effects of their use of water and the effects of their activities on local water resources. The Water Management Plan may include: Taking account of the efficiency of use and renewability of sources.

- Ensuring that the use of water does not result in adverse impacts on other users.
- Avoiding contamination of surface and ground water through run-off of soil, nutrients or chemicals, or as a result of inadequate disposal of waste including POME.
- Appropriate treatment of mill effluent and regular monitoring of discharge quality, which should be in compliance with national regulations.

National interpretation should refer to national guidelines or best practice and where appropriate include performance thresholds for requirements such as the size and location and methods of restoration of riparian strips or acceptable maximum runoff levels.

-----  
**FSC**

**PRINCIPLE 6**

**ENVIRONMENTAL IMPACT** -----  
-----

Forest management shall conserve biological diversity and its associated values, water resources, soils, and unique and fragile ecosystems and landscapes, and, by so doing, maintain the ecological functions and the integrity of the forest.

6.1 Assessment of environmental impacts shall be completed—appropriate to the scale, intensity of forest management and the uniqueness of the affected resources—and adequately integrated

**Water Principles and Criteria**  
**DRAFT – For Discussion Purposes Only**

into management systems. Assessments shall include landscape level considerations as well as the impacts of on-site processing facilities.

Environmental impacts shall be assessed prior to commencement of site-disturbing operations.

6.2 Safeguards shall exist which protect rare, threatened and endangered species and their habitats (e.g., nesting and feeding areas). Conservation zones and protection areas shall be established, appropriate to the scale and intensity of forest management and the uniqueness of the affected resources.

Inappropriate hunting, fishing, trapping and collecting shall be controlled.

6.3 Ecological functions and values shall be maintained intact, enhanced, or restored, including:

- a) Forest regeneration and succession.
- b) Genetic, species, and ecosystem diversity.
- c) Natural cycles that affect the productivity of the forest ecosystem.

6.4 Representative samples of existing ecosystems within the landscape shall be protected in their natural state and recorded on maps, appropriate to the scale and intensity of operations and the uniqueness of the affected resources.

6.5 Written guidelines shall be prepared and implemented to: control erosion; minimize forest damage during harvesting, road construction, and all other mechanical disturbances; and protect water resources.

6.6 Management systems shall promote the development and adoption of environmentally friendly non-chemical methods of pest management and strive to avoid the use of chemical pesticides.

World Health Organization Type 1A and 1B and chlorinated hydrocarbon pesticides; pesticides that are persistent, toxic or whose derivatives remain biologically active and accumulate in the food chain beyond their intended use; as well as any pesticides banned by international agreement, shall be prohibited. If chemicals are used, proper equipment and training shall be provided to minimize health and environmental risks.

6.7 Chemicals, containers, liquid and solid non-organic wastes including fuel and oil shall be disposed of in an environmentally appropriate manner at off-site locations.

6.8 Use of biological control agents shall be documented, minimized, monitored and strictly controlled in accordance with national laws and internationally accepted scientific protocols. Use of genetically modified organisms shall be prohibited.

6.9 The use of exotic species shall be carefully controlled and actively monitored to avoid adverse ecological impacts.

6.10 Forest conversion to plantations or non-forest land uses shall not occur, except in circumstances where conversion:

- a) entails a very limited portion of the forest management unit; and
- b) does not occur on high conservation value forest areas; and
- c) will enable clear, substantial, additional, secure long term conservation benefits across the forest management unit.

-----  
**ISCC**

**Biomass shall be produced in an environmentally responsible way. This includes the protection of soil, water and air and the application of Good Agricultural Practices**

**4.2.2 Natural water courses**

**4.2.2.1 Natural vegetation areas around springs and natural watercourses are maintained or re-established.**

The status of riparian vegetation is known by the producer. Where natural vegetation in riparian

areas has been removed there is a plan with a timetable for restoration.

**4.2.9 Irrigation**

**4.2.9.1 The producer can justify the irrigation in light of accessibility of water for human consumption**

## **Water Principles and Criteria**

### **DRAFT – For Discussion Purposes Only**

Beside the use of water for irrigation/fertigation, water is available for human consumption.

#### **4.2.9.2 The producer respects existing water rights, both formal and customary**

The producer can identify existing water rights and does respect them.

#### **4.2.9.3 The producer can justify the method of irrigation used in light of water conservation**

The idea is to avoid wasting water. The irrigation system used is the most efficient available

for the crop and accepted as such within good agricultural practice.

#### **4.2.9.4 To protect the environment, water is abstracted from a sustainable source**

Sustainable sources are sources that supply enough water under normal (average) conditions

and have sources for re-fillment.

#### **4.2.9.5 If ground water is used for irrigation, the level of the groundwater table is monitored**

The level of the ground water table is measured at least annually.

#### **4.2.9.6 Advice on abstraction has been sought from water authorities, where required by law**

Where required by law, there must be written communication from the local water authority on this subject (letter, license, etc.).

#### **4.2.10 Advice on Quantity and Type of Fertiliser**

##### **4.2.10.1 Recommendations for application of fertilisers (organic or inorganic) are given by competent, qualified persons**

Where the fertiliser records show that the technically responsible person making the choice of the fertiliser (organic or inorganic) is an external adviser, training and technical competence must be demonstrated via official qualifications, specific training courses, etc., unless employed for that purpose by a competent organisation (i.e. fertiliser company).

Where the fertiliser records show that the technically responsible person determining quantity and type of fertiliser (organic or inorganic) is the producer, experience must be complemented by technical knowledge (e.g. product technical literature, specific training course attendance, etc.) or the use of tools (software, on farm detection methods, etc.).

##### **4.2.10.2 During the application of fertilisers with a considerable nitrogen content care is taken not to contaminate the surface and ground water**

The producer must demonstrate that he observes at least a distance of 3 m to river banks etc. He takes care that there is no run-off of applied fertiliser into surface water bodies and the ground water.

##### **4.2.10.3 Fertilisers with a considerable nitrogen contents are only applied onto absorptive soils**

Fertiliser with a content of more than 1.5% of nitrogen in the dry matter are not applied onto flooded, water logged or frozen soils.

#### **4.2.11 Records of Fertiliser Application**

##### **4.2.11.1 Complete records of all fertiliser applications are available**

Records are kept of all fertiliser applications including:

- (1) the name or reference of the field
- (2) exact dates (day/month/year) of the application
- (3) the trade name, type of fertiliser (e.g. N, P, K)
- (4) amount of product which was applied in weight or volume.
- (5) application machinery type used and the method
- (6) name of the operator.

#### **4.2.12 Fertiliser Application Machinery**

## **Water Principles and Criteria**

### **DRAFT – For Discussion Purposes Only**

#### **4.2.12.1 The fertiliser application machinery is kept in good condition and verified annually to ensure accurate fertiliser application**

There are maintenance records (date and type of maintenance and calibration) or invoices of spare parts of both the organic and inorganic fertiliser application machinery available on request.

There must, as a minimum, be documented records stating that the verification of calibration has been carried out by a specialised company, supplier of fertilization equipment or by the technically responsible person of the farm within the last 12 months.

#### **4.2.13 Fertiliser Storage**

##### **4.2.13.1 Inorganic fertilisers are stored in a covered area**

The covered area is suitable to protect all inorganic fertilisers, i.e. powders, granules or liquids, from atmospheric influences like sunlight, frost and rain. Based on risk assessment (fertilizer type, weather conditions, temporary storage), plastic coverage could be acceptable.

Storage cannot be directly on the soil. It is allowed to store lime and gypsum in the field for a day or two before spreading.

##### **4.2.13.2 Inorganic fertilisers are stored in a clean area**

Inorganic fertilisers, i.e. powders, granules or liquids, are stored in an area that is free from waste, does not constitute a breeding place for rodents, and where spillage and leakage is cleared away.

##### **4.2.13.3 Inorganic fertilisers are in a dry area**

The storage area for all inorganic fertilisers, i.e. powders, granules or liquids, is well ventilated

and free from rainwater or heavy condensation. No storage directly on the soil.

##### **4.2.13.4 Inorganic fertilisers are stored in an appropriate manner, which reduces the risk of contamination of water courses**

All inorganic fertilisers, i.e. powders, granules or liquids are stored in a manner which poses minimum risk of contamination to water sources, i.e. liquid fertiliser stores must be surrounded by an impermeable barrier (according to national and local legislation, or to contain a capacity to 110% of the volume of the largest container if there is no applicable legislation), and consideration has been given to the proximity to water courses and flood risks.

#### **4.2.14 Integrated Pest Management**

##### **4.2.14.1 Assistance with implementation of IPM systems has been obtained through training or advice**

The technically responsible person on the farm has received formal documented training and/or the external technical IPM consultant can demonstrate their technical qualifications.

##### **4.2.14.2 The producer can show evidence of implementation of at least one activity that falls in the category of "Prevention"**

The producer can show evidence of implementing at least one activity that includes the adoption of cultivation methods that could reduce the incidence and intensity of pest attacks, thereby reducing the need for intervention.