ACAP AES SUSTAINABLE AGRICULTURE
ARS/ AES 1

Practical Guidelines for Certification

Part I

Certification Process: how it Works
This Standard provides requirements for the sustainable production and processing of agricultural products including food and non-food crops and products, livestock and livestock products.

The standard applies to all production and processing carried out under the ownership (legal responsibility) of the farm.

To enter the certification program, the Farm is registered in the ACAP AES database.

**Vegetable Crops**
- Name of crops (species)
- Area of production (ha)
- Expected quantity of certified production (tons)
- Map of sites and sites location information.
- On-farm postharvest activities and address of postharvest unit.

**Livestock**
- Name of species and breed
- Kind of production (ex. livestock: milk, meat, eggs, etc.)
- Estimated number of individuals
- Expected quantity of certified production (tons)
- Map of sites and sites location information
- On-farm slaughtering or processing unit information

**Additional information for groups of farmers**
- The same information is required for each farmer included in the group
What part of my production process is included in certification?

⇒ All Primary production cycles.

- This certification scheme requires that all the life/production cycle of the products is carried by the producer.
- All production processes carried out during the cycle of certification shall be carried out in agreement with the ACAP Eco-Mark applicable certification rules, for the selected Standard.

⇒ Harvesting Process.

- Only if harvest, slaughtering, collection of vegetal or animal products is carried out by the same Producer, the harvesting process must be included in the scope of certification.

⇒ Post-harvest Produce handling process.

- Produce handling shall always be included as long as the product belongs to the producer during handling (by the producer or subcontractor), in order to receive a license for use the ARSO Mark.
What models are available for certification?

⇒ Single Legal Entity (Farmer)

- In this model, one certificate is granted to one single Legal Entity (Owner of the farm. Ex: farmer, farming Company…)

- The whole area and activities within the Farm’s limits and under the responsibility of the legal entity are covered by the audit scope.

⇒ Group Administrator (Group of Farmers)

In this model, one certificate is granted to an organization, called the ‘Group Administrator (Farmer, processors, trader…) and is responsible for the compliance of the group with the applicable ACAP AES Standard. Is responsible for:

- implementing an Internal Management System (IMS), including the commercialization of product,
- training and technical assistance for staff and group members,
- internal inspections and the corresponding follow-up actions.
- The minimum number of member farms of a group administrator is two member farms.
What are the Requirements of the ACAP AES Sustainable Agriculture Standard?

1. The Requirements of the Standards are grouped under 15 main Principles. Each principle describes a specific focus area of the standard:

   Principle 1: Legal compliance
   Principle 2: Economic Sustainability
   Principle 3: Social and Environmental Management
   Principle 4: Human Rights Protection
   Principle 5: Labor Rights Protection
   Principle 6: Maintenance of Biodiversity
   Principle 7: Soil Management
   Principle 8: Water Management
   Principle 9: Climate Change, Mitigation and Adaptation
   Principle 10: Crop Husbandry and Farm Management
   Principle 11: Pesticide Use and Management
   Principle 12: Energy Efficiency
   Principle 13: Waste and Pollution Management
   Principle 14: Handling and Segregation of Certified Products
   Principle 15: Animal Husbandry

2. The Standard Zooms in detail of specific Criteria and Indicators
ACAP AES Standards
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What areas related to the Farm’s production and activities are involved?

⇒ Areas destined for agricultural and livestock production of products intended to be certified.

⇒ Areas involving human activity and other infrastructure within the farm limits, including administrative infrastructure, collection points, processing and packing units and storage facilities. Leased areas inside the operation.

⇒ High Conservation Value (HCV) areas, forests and other natural ecosystems, as well as fallow land.

⇒ Personnel, including all contracted and subcontracted workers, supervisory and administrative staff, and management and owner representatives.

⇒ People who live temporarily or permanently on the Farm’s site.

⇒ All documentation relating to social, agronomic and environmental management and considered relevant to determining compliance with the Standard.

⇒ Documentation related to trading of the certified and non-certified product handled by the farm.

⇒ Surrounding communities that may be directly affected by the farm’s activities.
When is the right time to receive an audit for certification?

- The best practice is to plan the audit when the higher quantity of information and documents is available with regard to the latest production cycle.
- All the products must be present on-site and at least one product representing a “family”

1. Initial Verification Certification - Crops:
   - Cultivation cycle is completed and harvest is in place the day of verification.
   - Harvest can be assessed on at least one crop representative of the following groups: fruit perennials, open field vegetables, green-house vegetables, multiple harvest crops.
   - If post-harvest activity is included in the scope of certification, it must be in place the day of verification.

2. Initial Verification Certification - Livestock:
   - Life/production cycle is completed. The final steps of production are completed (ex: slaughtering, milking, eggs picking, etc. . . . )
   - Complete cycle can be assessed on at least one species representative of a similar group of species.
What is the cycle for Auditing and Certification?

The ACAP/ AES Certificate and ARSO Mark License has a life cycle of 3 years.

During the 3 years compliance must be confirmed by means of Surveillance Activities.

- During the duration of the cycle the certificate Tier can be improved according to audit results.
- It is not possible to move back to a lower Tier.
- One surveillance audit is carried out every year within 12 months from the date of the initial certification audit.
The Continuous Improvement Program

⇒ Continuous improvement criteria

ACAP AEM Standards contain a continuous improvement system that requires to gradually increase compliance over 4 performance levels. (Tiers)

- Maturity Model of ACAP AEM certification scheme

The Performance Tiers provide a framework for producers to improve their compliance levels in line with the continual improvement principles.

- Categorization of Requirements (Indicators)

Each indicator has been categorized in relation to its relevance for the Standard and also in consideration to the different tier in focus.

- Compliance to different maturity levels (Tiers)

According to the different categorization of the indicators, compliance can be achieved:

⇒ Before the Audit: Pre-requirements assessed during preliminary document review

⇒ The day of the audit: Critical Requirements After the end of the audit: Required, General, Optional upon completion and verification of corrective actions with a Follow-up audit and according to established timeframe.

⇒ Tolerances: the defined tolerances do not need to be addressed with corrective actions till next audit (ref. to the following table)
<table>
<thead>
<tr>
<th>Requirement</th>
<th>Description</th>
<th>% Bronze Tier</th>
<th>% Silver Tier</th>
<th>% Gold Tier</th>
<th>% Platinum Tier</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre- Required</td>
<td>Mainly related to compliance of legal requirements. Compliance is required to enter the certification process</td>
<td>100% Before the Audit</td>
<td>100% Before the Audit</td>
<td>100% Before the Audit</td>
<td>100% Before the Audit</td>
</tr>
<tr>
<td>Critical</td>
<td>Cover the highest-priority and highest-risk environmental, social and labour issues. Failing to comply the day of audit results in the denial or the immediate cancellation of the certificate</td>
<td>100 % The day of audit</td>
<td>100 % The day of audit</td>
<td>100 % The day of audit</td>
<td>100 % The day of audit</td>
</tr>
<tr>
<td>Required</td>
<td>Critical for compliance and achievement of the certificate”. Failing to comply at Follow up results in the denial or the immediate suspension of the certificate</td>
<td>100% at FU audit</td>
<td>100% at FU audit</td>
<td>100% at FU audit</td>
<td>100% at FU audit</td>
</tr>
<tr>
<td>General</td>
<td>Tolerance on indicators applicable for the scope is accepted for certification</td>
<td>80% at FU audit</td>
<td>80% at FU audit</td>
<td>80% at FU audit</td>
<td>80% at FU audit</td>
</tr>
<tr>
<td>Optional</td>
<td>Tolerance on indicators applicable for the scope is accepted for certification</td>
<td>20% at FU audit</td>
<td>20% at FU audit</td>
<td>20% at FU audit</td>
<td>20% at FU audit</td>
</tr>
</tbody>
</table>
Where do we find detail for Categorization and Tiers?

- Detail is found in the ACAP AES Agriculture Check-list.
- Each Tier will account the same total number of Indicators, but different number of indicators allocated in different categories.

### Total Number of Requirements and distribution in different Tiers

<table>
<thead>
<tr>
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<th>BRONZE</th>
<th>SILVER</th>
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<td>PRE-REQUIRED</td>
<td>14</td>
<td>14</td>
<td>14</td>
<td>14</td>
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<tr>
<td>CRITICAL</td>
<td>19</td>
<td>20</td>
<td>29</td>
<td>32</td>
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<tr>
<td>REQUIRED</td>
<td>90</td>
<td>103</td>
<td>137</td>
<td>140</td>
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<tr>
<td>GENERAL</td>
<td>45</td>
<td>62</td>
<td>39</td>
<td>38</td>
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<tr>
<td>OPTIONAL</td>
<td>48</td>
<td>28</td>
<td>13</td>
<td>8</td>
</tr>
<tr>
<td>N/A</td>
<td>16</td>
<td>5</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>TOTAL</td>
<td>232</td>
<td>232</td>
<td>232</td>
<td>232</td>
</tr>
</tbody>
</table>

### General Topic: Economic sustainability

**Principle:** To produce process and trade agricultural products in an economically and financially viable way.

- **6.2.1 Fair business practices** Criterion: The operator shall follow fair business practices and thereby not engage in any fraudulent, deceptive, or dishonest consumer or commercial business practice that is prohibited by statute or regulation.
  - **6.2.1.1 Number of final, binding and unappealable decisions of an applicable judicial authority against the operator for unfair business practices that remain unresolved.**
    - PRE-REQ. PRE-REQ. PRE-REQ. PRE-REQ.
    - GENERAL. GENERAL. REQUIRED. REQUIRED.

- **6.2.2 Financial risk management** Criterion: The operator shall manage financial risk.
  - **6.2.2.1 There is evidence that the operator has identified any significant financial risks.**
    - GENERAL. GENERAL. REQUIRED. REQUIRED.
  - **6.2.2.4 There is evidence that the operator has strategies in place to manage financial risk.**
    - GENERAL. GENERAL. REQUIRED. REQUIRED.
Are Sanctions applied in case of open Non-conformances?

The ACAP AES Standard considers different levels of sanctions according to the different level of Non-conformances and the timeframe taken to complete corrective actions.

- **Warning**: Major or Minor NCs detected during verification, to be closed within given time with FU audit.

- **Suspension**: When the causes of a Warning are not resolved within given time. Can be applied for maximum 6 months.

- **Withdrawal and Cancellation**: The ARSO Certificate and the ARSO Mark license can be withdrawn by the CB in case:
  - The causes of a Suspension are not removed on time
  - The Producer is not able to manage the Certification anymore
  - Serious infringement of integrity
  - Bankruptcy
  - Destruction of natural ecosystems (minor exceptions to be evaluated for compensation)

- **Child labor remediations**: Producers shall provide evidence of remedial actions for child laborers and his or her family following their removal from farm employment.
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Part II

Principles, Criteria & Indicators

Focus and Compliance
Principle 6.1: Legal compliance:

Compliance with all applicable laws and regulations.

What does “Applicable laws and regulation” means?

Applicable to the Operation: means all the regulation that has in focus the activity in place (farming of Crops, Livestock and post-harvest activity under the responsibility of the Farmer)

Applicable to the Standard: means all the regulation that is clearly mentioned by the Standard or involving the requirements of the Standard.

Some example:

- licenses, permits required by law for the production under certification
- working conditions, contracts and wages for workers
- rules on conservation areas
- use of water and land

VERY IMPORTANT

- Applicable legislation must be identified, available and documented
- A system to keep update with legislation must be in place
- No existing unresolved issues of legal non-compliance demonstrated
**Principle 6.2: Economic Sustainability**

*To produce process and trade agricultural products in an economically and financially viable way.*

**Fair business practices**
- Do not engage in any fraudulent, deceptive, or dishonest consumer or commercial business practice

**Financial Risk Management**
- Identify any significant financial risks.
- Develop strategies to manage significant financial risks.
Principle 6.3: Social and Environmental Management (ESMS)

6.3.1 Social and Environmental Management System

A social and environmental management system ensuring sustainability and integrity with respect to this standard and respective national legislation binding for social, labour and environmental aspects of operations.

What is a Social and Environmental Management System?

An ESMS is a process for integrating environmental considerations and requirements into day-to-day management and long-term planning for a farm and examines a production system from start to finish from inputs to products.

ESMS Develops a plan for action that:
⇒ fits specific needs and resources,
⇒ builds upon their stewardship principles,
⇒ helps comply with legal requirements,
⇒ works to continually improve the operation.

Why is the Social and Environmental Management System needed?

To assure that all necessary policies, programs and procedures that facilitate compliance with the requirements of this standard and relevant local and national legislation are:
⇒ Identified
⇒ Documented
⇒ Implemented
⇒ Available to community
⇒ Monitored
A solid, functioning Environmental and Social Management System (ESMS) is made up of interrelated parts:

⇒ Policy
⇒ Identification of Risks and Impacts
⇒ Management Programs
⇒ Organizational Capacity and Competency
⇒ Emergency Preparedness and Response
⇒ Stakeholder Engagement
⇒ External Communications and Grievance Mechanisms
⇒ Ongoing Reporting to Affected Communities
⇒ Monitoring and Review
What are the main tools to design the ESMS?

- **Objectives and Projects**: clear identification and description of the objectives of the system.
  
  Clear identification and description of the production project and innovations planned for the farm.

- **Maps**: identifying the Projects, Production areas, infrastructure and special areas (for conservation and protection), water bodies, land profile, the near Communities and external activities that may have an impact to the requirements of this standard.
What are the main tools to design the ESMS?

⇒ **Plan of Actions:** identify all aspects that may represent a risk to the sustainability of the farm’s production or innovation project.

Plan mitigation actions to prevent negative impact according to AES Standard requirements

⇒ **documentation and records:** identify all documents required by the AES Standard to support the different elements of the ESMS (ex: procedures, specific plans, instructions, risk assessments…)

Identify what is the critical information you want to record about your production activity (identify and include all records required by the AES Standard) and develop recording tools (manual or electronic)

⇒ **monitoring and regular reviews:** check the system on regular intervals to assure it is correctly implemented.

Use AES Standard check list or make your own to assure that all relevant aspects are taken into consideration

⇒ **follow-up, measurement and analysis:** to evaluate the functioning of the ESMS and contribute to continual improvement.

Identify the best indicators to be checked and measured for improvement

⇒ **training and education program:** assure that all the people involved with the ESMS are aware of the goals, procedures and impact of their own day-to-day actions

⇒ **commitment by the farm’s service providers:** assure the same level of commitment to ESMS implementation from both employees and sub-contractors.
Why Community well-being is a relevant part in the ESMS?

The farming operation must consider the interests of local populations and community interest groups, regarding farm activities or changes that could have an impact on their health, employment or local natural resources.

A Sustainable operation shall ensure participation in actions that strengthen the local economy through (and including) the following actions:

⇒ Supporting employment of residents
⇒ Pro-active consultations to establish community needs and aspirations, and to work towards a commonly agreed goal for the mutual benefit of all participating parties.
⇒ Document and share complaints and comments received on farm operation
⇒ Create awareness on sustainability and respect of local environment through education programs
⇒ contribute to the protection and conservation of community natural resources, collaborate with the development of the local economy, and contribute for community infrastructure and local shared resources

⇒ Example of infrastructures: schools, pathways, aqueducts, as well as water and other resources.

The operator shall have a legitimate right to land use and tenure:

⇒ Official documentation available
⇒ absence of significant disputes on land use
⇒ consent of local communities
Principle 6.4: Human Rights Protection

Respect human rights.

Criteria and Indicators for this principle are based on respect of Human Rights as from the Universal Declaration of Human Rights.

⇒ Proof of Respect to Local Authority Legislation (No open issues on violation of Human Rights)
⇒ Implemented declaration on social practices supporting Human Rights
Principle 6.5: Labor Rights Protection

*Respect of labour rights.*

Criteria and Indicators for this principle are based on respect to the nationally applicable ILO Conventions.

What are the ILO Conventions?

- A part of the United Nations, the ILO has set minimum standards that should be a right for *every worker*, all over the world.
- The International Labor Organization (ILO) is a tripartite organization consisting of trade unions, governments and companies, and is part of the United Nations system.
- Conventions: are legally binding international treaties that may be ratified by member states. A convention lays down the basic principles to be implemented by ratifying countries.

This AES Standard is based on a voluntary choice for implementation. Legislation relevant to an Indicator of the AES Standard, more demanding of the Standard overrides the AES requirement. Where there is no legislation (or legislation is not so strict) the AES Standard requirements apply.

This concept also applies for Principle 6.5 in the case where the AES Standard indicator is more restrictive than local legislation.

**Criteria related to Principle 6.5 “Labour Rights”**
⇒ **Subcontractors (suppliers of services).**
- Ensure that human rights and labour rights apply equally when labour is contracted through third parties.
- Evidence of policies for managing sub-contractors rights and contracts.

⇒ **Forced or slave labor.**
- Employment is Freely Chosen when workers work voluntarily and without threat of penalty of any kind.
- Workers keep their documents and are free to live work on agreed schedule and live employment on due notice.
- Possible exploitation channels:
  - Directly by the Farmer
  - By an intermediary used by the Farmer, such as labour broker
  - By third parties (unknown by the supplier and intermediary)
- Agriculture is among the sectors most concerned

Migrant workers and indigenous people are particularly vulnerable to forced labour.
⇒ Child labour

- is a violation of fundamental human rights and has been shown to hinder children's development, potentially leading to lifelong physical or psychological damage.
- **Minimum Age**: no less than the age of completion of compulsory schooling and, in any case, no less than 15 years.
- **Hazardous Work**: work which is likely to jeopardize the health, safety or morals of young persons. The minimum age shall not be less than 18 years.
- **Light Work**: is not harmful for health and development and is not prejudice for attendance at school.
- **National laws** or regulations may permit the employment or work of persons 13 to 15 years of age on light work
- **Family Work**: special local rules apply for children helping the Family outside school. Regulation changes by Country.
⇒ Trade unions, freedom of association and the right to organize
- right of forming and joining or not joining trade unions, freedom of association, the right to organize, and to collectively bargain, according to national law.
- The same right is guaranteed also when restricted by national law
- Formal and documented election of workers representatives
- No penalties and consequences for representatives and workers

⇒ Contracts
- contract or equivalent document, covering workers’ wages and working conditions, according to national law and relevant collective agreements.

⇒ Working conditions
- Minimum wage: minimum amount of remuneration that an employer is required to pay wage earners for the work performed during a given period. It usually defined by law
  - Cannot be reduced by collective agreement or an individual contract
- proof that all agreed wage is paid
- men, women and migrant workers earn equal pay for equal work.
- Overtime hours are volunteer, recorded, limited, agreed, paid.
- Training on workers’ rights and two-way communication.

Wages:
⇒ Directly paid to the workers,
⇒ Freedom of the worker to dispose of his wages.
⇒ When needed, goods and services must be provided on site at a normal local price
⇒ Deductions from wages only under conditions prescribed by national laws
⇒ Prohibited any deduction from wages to obtaining or retain employment, made by a worker to an employer or his representative or to any intermediary
Why the Health and safety Risk assessment is required?

This exercise has the aim to identify all significant hazards related to the health and safety of the workers while they carry out day-by-day work.

What are the steps for Health and safety Risk assessment?

The methodology to be applied includes the following steps:

4. Make a list of all activities carried out by the workers and related to the work carried out, including transportation from and to the work place.

5. Identify all possible hazards related to the work

6. Identify the possible origin/ causes of the hazard

7. Describe the probability for the Hazard to happen

8. Describe the consequences and their severity

9. Identify significant hazards likely to happen and prioritize significance

10. Describe mitigation and preventive actions to be implemented for each hazard

11. Identify actions to be taken in case of incident (happening of the hazard)

12. Prepare procedure and instructions

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</thead>
<tbody>
<tr>
<td></td>
<td>Pruning</td>
<td>Cutting tools</td>
<td>Cutting of hands, damage to eyes</td>
<td>High</td>
<td>High</td>
<td>Protection gloves and googles</td>
<td>Training on use of dangerous equipment</td>
<td>12345</td>
</tr>
</tbody>
</table>

Internet is an important source of information on how to address Health and Safety on farm.

Follows some example of references for Health and Safety Management:


EU Health and Safety Authority: [https://www.hsa.ie/eng/Topics/Personal_Protective_Equipment_-_PPE/PPE_-_FAQs/Personal_Protective_Equipment_FAQ_Responses.html](https://www.hsa.ie/eng/Topics/Personal_Protective_Equipment_-_PPE/PPE_-_FAQs/Personal_Protective_Equipment_FAQ_Responses.html)


⇒ **Social welfare and benefits**: evidence of compliance to legislation and collective negotiation

⇒ **Non-discrimination**: Workers shall be free of discrimination of any kind, whether in employment or opportunity, with respect to gender, wages, working conditions, and social benefits.

What is required to comply with AES Standard?

This chapter is mainly based on interview of the workers and document assessment

⇒ Written self-declaration to comply with ILO 111 Convention
⇒ Employees are not aware of any form of discrimination, punishment, oppression, abuse, harassment
⇒ No gender or migrant workers discrimination
⇒ Job opportunities are publicly available
⇒ Evidence of protection of disabled people’s rights
⇒ Evidence of remedy actions to compensate previous discriminations

⇒ **Retrenchment**: upon consultation with workers, follow legislation
Right to Privacy:
- employees are informed about the use of information, follows legislation
- Surveillance measures are done without harassment or intimidation and according to defined procedures

What is required to comply with AES Standard?
- Procedures for treatment of personal data
- Procedures for surveillance methods applied
- Evidence that employees have been informed
- Compliance to local legislation about privacy
- Records of personnel and complaints
Principle 6.6: Maintenance of Biodiversity

To maintain and/or enhance biodiversity and supporting habitats within the farming system and its surroundings.

ARS/AES1: 3.13 Biodiversity:
the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of

What is an Ecosystem?

ecosystem includes all of the living things (plants, animals and organisms) in a given area, interacting with each other, and also with their non-living environments (weather, earth, sun, soil, climate, atmosphere). Ecosystems are the foundations of the Biosphere and they determine the health of the entire earth system.

In an ecosystem, each organism has its own niche or role to play.

All the members of the system are interconnected, so the loss or change of
Protection and Conservation of Biodiversity. Actions required:
⇒ Identify ecosystem present on farm or influenced by farm activity (describe and indicate on Map)
⇒ Protect primary ecosystems (primary forest, wetlands to be preserved)
⇒ Identify animal, aquatic, vegetal wild species present on farm or that may be influenced by farm activities
  ▪ Make a list and identify on Map
  ▪ Identify habitat and needs (life cycle, food, reproduction habits) of the most relevant species (presence, rarity, endangered)
⇒ Identify rare, threatened or endangered species that exist in the area
⇒ Protect habitats from destruction and re-create habitats where possible.
⇒ Protect older, fruiting trees. Are especially important to insects and birds

Biodiversity management plan:
⇒ Mapping of areas
⇒ Implement appropriate crops management
⇒ Periodical assessment of important habitats
⇒ Buffer zones and mitigation actions
⇒ Use of cover crops

Invasive alien Species:
▪ prevent invasive species from invading areas outside the operation site.
▪ only new Species (plant or animal), approved by competent authorities shall be introduced.
▪ risk assessment on the impacts the new species will have on the ecosystem.
▪ Management plan (cultivation practices, mitigation actions in case of escape of a new species)
▪ Continuous monitoring system for escapes and the presence of pests and pathogens outside the operation site.

WWF endangered species directory https://www.worldwildlife.org/species/directory?page=2
IUCN red list of Threatened Species https://www.iucnredlist.org/
Protection of areas of high biodiversity value

There shall be no economic production in areas designated as conservation areas according to national law and regulations and international conventions except when a specific form of use is stated to serve the biodiversity protection purpose in official documentation and/or approved management plans.

What is required to comply with AES Standard?

⇒ Evidence of identification of high biodiversity value areas (also on Map)
⇒ Evidence of identification of status of farm areas (also on Map)
  ▪ Mapping and Description of the conservation areas
  ▪ Consultation with experts and stakeholders to identify conservation areas.
  ▪ Identification of possible impact from the Farm Operation and Bioenergy production (if applicable)
⇒ Existence of a biodiversity management plan (documented)
  ▪ NO use of “no conversion area” (exception may be evaluated)
  ▪ Evidence of farm operation managed to maintain or enhance conservation values
  ▪ Evidence of precautionary measures and evaluation of effectiveness
  ▪ NO operation(s) on any of the areas defined as “no-go areas” or Alliance for Zero Extinction (AZE) area
  ▪ NO hunting, fishing of rare, threatened, endangered, protected species.

Ecological corridors

protected, restored or created to minimize fragmentation of habitats.
Principle 6.7: Soil Management

To maintain and replenish long-term soil health, fertility and productivity

Soil Management Plan

A soil management plan, which aims to maintain and protect soil health, quality and productivity and reverse soil degradation, shall be developed and implemented.

- evidence of implementing measures to improve soil health, such as Conservation Agriculture practices as defined by the FAO

Conservation Agriculture is based on three main principles adapted to reflect local conditions and needs:

1. Minimum mechanical soil disturbance (i.e. no tillage) through direct seed and/or fertilizer placement. This reduces soil erosion and preserves soil organic matter.

2. Permanent soil organic cover (at least 30 percent) with crop residues and/or cover crops. Maintaining a protective layer of vegetation on the soil surface suppresses weeds, protects the soil from the impact of extreme weather patterns, helps to preserve soil moisture, and avoids compaction of the soil.

3. Species diversification through varied crop sequences and associations involving at least three different crops. A well-designed crop rotation promotes good soil structure, fosters a diverse range of soil flora and fauna that contributes to nutrient cycling and improved plant nutrition, and helps to prevent pests and diseases.

What is required to comply with AES Standard?

⇒ develop a soil management plan or implement a soil management plan approved by a local authority.
⇒ Evidence of Monitor of management plan ongoing status at appropriate intervals.
⇒ Collect data on quality and fertility (productivity) of the soil
  - Salinization
  - Compaction,
  - Contamination,
  - Water holding capacity
  - Retention of organic carbon content.
⇒ Assure conservation of organic matter
⇒ Conservation Agriculture practices as defined by the FAO
⇒ Prevent and control erosion
Soil management plan: recommended steps

1. Prepare a map or maps of the whole farm showing the risks of runoff and water erosion, flow pathways where water runs across the surface
2. Identify fragile soil and areas sensitive for erosion and compaction
3. Identify actions to reduce or prevent soil erosion and compaction
4. Identify different quality and productivity of soil
5. Identify the sustainable abstraction of agrarian and forestry residual products
6. Identify measures to improve soil health, such as Conservation Agriculture practices (FAO guidelines)
   a. Organic direct planting,
   b. Limited tillage
   c. Permanent soil cover,
   d. Crop rotation, or Fallow areas with natural or planted vegetation
7. Establish monitoring plan to keep fertility of soil under control
8. Identify actions to preserve and improve fertility of soil
9. Land and conservation areas at risk are identified and the policy and management measures are formulated
Soil productivity and fertility

Soil productivity and fertility shall be maintained or improved with due regard for soil structure and stability, organic matter and nutrient content.

- maintain soil structure and stability,
- organic matter and nutrient content, soil soluble salts, etc.
Farm nutrient management plan: elements to be included

⇒ Top soil nutrient contents
⇒ Needs and nutrient consumption done by the crop
⇒ Natural dispersion/ mineralization of nutrients (including organic matter)
⇒ Nutrient inputs (including organic matter)
⇒ Monitoring and testing program (min. once/ 5 years – N, P, K and pH.
⇒ Soil impact assessment

Maintain soil chemical and biological status

⇒ Optimize the use, handling, storage and disposal of chemical inputs (ex: fertilizers, pesticides, fuels…)
⇒ Apply Integrated Pest Management (IPM) and reduce dripping on soil
⇒ Control the use of restricted pesticides keep constant up to date.
⇒ Keep pesticides in a separate and locked storage.
⇒ Biological control agents, organic pesticides, and traditional alternative non-chemical pest control have to be identified and implemented on farm

<table>
<thead>
<tr>
<th>Fertilization Plan</th>
<th>Total Nutrients in Soil</th>
</tr>
</thead>
<tbody>
<tr>
<td>+ Nutrients Used by Crop + Loss for mineralization + Drained by Water + Used/ Blocked by Soil + Lost with erosion</td>
<td></td>
</tr>
</tbody>
</table>
Principle 6.8: Water Management

To maintain or enhance the quality and quantity of surface and ground water resources, and respect prior formal or customary water rights.

Water rights: Operators shall respect the existing water rights of local and indigenous communities.

⇒ do not negatively affect (i.e. reduce and/or alter in quality or quantity) the water supply to communities which rely on the same water resource(s).
⇒ Identify the users of the same water resource(s) as operation within a range of 10 Km; (include on Map)
⇒ analyze the risk to affect the water supply in quality or quantity with Farm operation(s);
⇒ define a water testing program (parameters frequency of testing).
⇒ Ensure the use of water shall not affect the communities that rely on the same water source(s) for subsistence. Quantity and Quality
⇒ the water resource(s) is not legitimately disputed by stakeholders who rely on the same water resource(s).
⇒ outcomes and agreements resulting from the consultation process are comprehensively and fully implemented.
What are the steps to take to assure respect of water rights according to AES Standard?

⇒ consult with water regulatory authorities, local water experts, community members, and indigenous peoples which rely on the same water resource(s) to:
- identify all stakeholders who rely on the same water resource(s);
- identify formal water rights relating to the same water resource(s);
- identify customary water rights relating to the same water resource(s);
- assure that there is priority to human consumption
⇒ formal or customary water rights are based on Free, Prior and Informed Consent of stakeholders relating to and/or relying on the same water resource(s)
⇒ Implement measures to continuously monitor and ensure comprehensive implementation
Water management plan

Water resources are managed at the local and/or site level to protect water quality and quantity over time and taking the watershed into account.

The operator has developed and implemented a water management plan …

What are the most relevant elements to be included in the Water Management Plan?

- Evaluation of local conditions of rainfall, water storage, water distribution and water treatment.
- Solutions that lower the risk for exhaustion and overuse of regional water resources
- Measures to avoid depletion of surface or groundwater resources beyond replenishment capacities.
- Measures to contribute to the enhancement or maintaining of the quality of surface or groundwater resources.
- Measurable indicators and monitoring plans to assure the plan is implemented

Plan is available to the public unless this is limited by national law or international agreements on intellectual
Fresh water supply

This is a key aspect in the water management Plan.

The agriculture management shall be aimed at the insurance of freshwater supply and quality for sustainable food production and sustainable rural development.

Measures are in place to prevent, eliminate or reduce the impact of the Farm Operation on Water resources to a sustainable level.
1. **Identify the Scope of the plan.**
   before you start working on a plan, you must identify the scope by asking some questions.

   **Example of questions:**
   1. Why do I need this plan?
   2. What are the objectives I expect to reach with the plan?
   3. What is the object of this work?

   **Example of answer to the questions:**
   1. I need this plan because I would like to plant 50 Ha of vegetables and I want to know if this is sustainable for the water sources of the area, I also want to enhance the use of water for my farm and obtain the best result with the lowest impact.
   2. This plan will give me information about availability and quality of water in the area, how to use it in the most effective and sustainable way, what are the other involved users of the same sources and what actions need to be taken to reach my goals.
   3. The objective of this work is:
      - To identify all water sources and possible availability for the farm
      - To identify all other users of the same sources and their rights
      - To be aware of the quantity and quality of the available water in different periods of the year
      - To assess the possible impact of my farm activity on quality and quantity of the water
      - To evaluate the impact of my farm activity on other users of water (communities, other operations, wildlife …)
      - To evaluate the impact of other stakeholders on my farm
      - To evaluate and implement effective actions to prevent or mitigate possible negative effects and challenge and enhance opportunities for improvement

2. **Collect Information**
   It is fundamental to have a full knowledge about the topic in the scope of the plan.

   To collect the information different sources may be used:

   **Example of sources:**
   - Public authority (water, conservation, etc…)
   - Research institutions
   - Professionals/ experts
   - Internet/ libraries
   - Surrounding Communities
   - Other users of the same water
   - Visual on-site observation

   **Example of tools for investigation:**
   - Legislation
   - Publications (study done on the area)
   - Dedicated Maps of the area
   - Meteo bulletins and statistics
   - Direct interview and collection of information (public officers, experts, community representatives, etc…)

   Transfer all the information on your personal MAP and make a summary for your plan.

   Make a list of all the information you need to collect for your plan.

3. **Set Goals**
   According to the result of your evaluation of strength and challenges, plan the activities you think are sustainable and set your production goals.

   **Example of production goals:**
   Plantation area, crops species, yield…
   Quantity of water needed and in what periods

4. **Identify Issues and Priorities**
   As a result of the data collection, cross checking with the Productive objectives of the Farm Operation, Make a list of all the challenges as well as the points of strength related to the objective of the plan (ref: sustainable use of water for your crops)

   **Example of Challenges:**
   - is the water enough to cover all needs of the area including my additional operation?
   - Is the quality adequate for irrigation?
   - Is the community willing to allow the use?
   - Is there any binding from the authorities?
6. Identify candidate Mitigation Measures
Keeping in focus the identified challenges and the set goals, make a list of the possible actions to be taken to meet the goals while preventing, eliminate or control into a sustainable level the identified challenges.

Examples of measures to manage limited availability of water:

- Select species and varieties acclimated to dry areas
- Arrange the crop’s cycle in order to have the higher need of water during rainy season
- Use micro-irrigation systems such as drip irrigation localized only where needed
- Organize irrigation shifts (frequency, duration) according to the kind of soil, climate and crop’s needs.
- Consider alternative cultivation techniques such as soil-less crops with recycled water
- Use the right kind of fertilizers to optimize water uptake from the plant’s roots.
- Build a water reservoir to collect water in the moments of higher availability (including collecting rainwater)

7. Evaluate Candidate Mitigation measures
Evaluate all measures included in the list and shortlist what you think can be appropriate for your operation.

5. Define an plan of action
Describe in detail how each of the selected measures must be applied to be effective and what are the expected results

Example:
- Document procedure and instructions to implement selected actions
- Identify data important to be recorded
- Define and describe expected results
- Define indicators to be assessed to assure the action plan is correctly implemented and is providing expected results
- Organize a monitoring plan (when, what, who?)

10. Implement the action plan
Apply actions described in the action plan and verify consistency with planned results.

Example of actions for implementation
- assign responsibilities
- train involved operators and create general awareness about the actions plan
- carry out planned actions in the normal farming operation environment
- collect data
- verify consistency of data with regard to planned indicators and final results.

8. Improve and update plan
Use all information collected during day-to-day farm operation, including data from monitoring activities to identify areas for improvement.

- Identify and complete corrective actions
- Review procedures and instructions
- Review processes
- Increase competence and resources
- Review indicators and goals

9. Implement monitoring plan
Keep actions under control by monitoring the implementation of the plan.

Example of monitoring actions
- Prepare a check list of all key aspects and indicators to be checked
- Implement monitoring plan and keep record of results.
- Use identified measurable indicators and also other collected information to verify if any improvement is needed
Principle 6.9: Climate Change, Mitigation and Adaptation

To contribute to the mitigation of and the adaptation to the detrimental effects of climate change.

Agriculture is highly exposed to climate change, as farming activities directly depend on climatic conditions.

Climate change adaptation

Farmers shall take note of current and predicted climatic changes and their potential impacts on their farming activities, and to implement adaptation strategies to increase their resilience and reduce their vulnerability to climatic changes.

How does Climate Changes interfere with Farming Operation?

Some example:

⇒ Crops life cycle is strictly influenced by climate:
  ▪ Rainfall
  ▪ Temperature
  ▪ Wind
  ▪ Hair Humidity

⇒ Beneficial organisms as well as well as pest life cycle is also influenced by climate.

⇒ Change of climate may determine different needs for irrigation

⇒ Flowering or other phases of the plant cycle may happen in the wrong climate conditions

What can be done to adapt to Climate Changes?

Adaptation measures to be considered include:

⇒ more efficient use of water on the farm
⇒ wetland and catchment/riparian restoration to increase water quantity and quality;
⇒ planting drought resistant crops, and removal of alien plant infestations
⇒ reduce stocking rates to reduce grazing pressure on rangelands;
⇒ build soil health and avoid bare fallows to prevent erosion and soil water loss.
Principle 6.10: Crop Husbandry and Farm Management

To develop and implement policies and procedures on input procurement, use/application, storage and disposal of unwanted inputs and their residues.

What is required to comply with AES Standard?

⇒ Evidence that the chemical input procured are in compliance with applicable laws and regulations (both local and international)
⇒ Chemical Store stores:
  ▪ located away from water sources
  ▪ Built and kept according to local legislation
  ▪ Locked with limited access
  ▪ Document stock control plan
  ▪ Available first aid facilities and spillage and emergency equipment
  ▪ Emergency procedures in place and known by workers.
⇒ equipment for carrying out activities such as mixing and applying agrochemicals
⇒ Procedures concerning calibration, repair and maintenance of equipment
  ▪ records maintained.
Principle 6.11: Pesticide Use and Management

To promote the use of environmentally friendly non-chemical methods of pest management and strive to avoid the use of chemical pesticides.

What is Integrated Pest Management (IPM)? What are the requirements for AES Standard?

⇒ IPM is a plant protection program based on ecological principles for the control of harmful pests (most common are insects, diseases, animals and weeds).

⇒ It gives priority to the use of physical, mechanical, cultural and biological control methods, in order to reduce and rationalize the use of agrochemicals.

⇒ It includes 3 main pillars: Prevention, Monitoring, Intervention

⇒ IPM actions taken to protect the crops are recorded
  ▪ Traceability of propagation material used (seeds, seedlings, cuttings)
  ▪ Results of monitoring and scouting activities
  ▪ Fertilization and irrigation records
  ▪ Spray and other intervention records (dosage, name of product)
  ▪ Re-entry intervals
  ▪ Pre-harvest intervals and harvest records
  ▪ Training of Operators involved in Pesticide application

⇒ plan for eliminating the use of all endocrine disruptions and cholinesterase inhibiting substances, carcinogenic and mutagenic causing substances WHO Class 1a and 1b, WHO class II and all highly hazardous chemical substances under the Stockholm convention on persistent organic pollutants (Pops Convention)
Prevention

to implement practices to create the best conditions to prevent the development of harmful pests.

1. **Increase the resistance of the plant** to be affected by diseases or attacked by harmful pests.
   
   **Examples:**
   - Best agricultural practices (including fertilization and irrigation) to obtain healthy crops with higher self-immunity level to resist parasites attacks.
   - Use of variety selected for genetic resistance to specific parasites
   - Use of species and varieties well acclimated to the area of cultivation.
   - Use of pheromones to prevent insects breeding.

2. **Eliminate or control** the conditions for the surviving, growth and reproduction of diseases and parasites.
   
   **Examples:**
   - Implement good hygiene practices on farm by removing wastes and residues from previous crops
   - Assure good drainage of water in the fields (plants root zone) and also in other areas of farm
   - Keep fields borders clean from weeds and other spontaneous plants that may help the pests to complete their life cycle (intermediate hosts)
   - Implement crops rotation that may influence survival of harmful pests
   - Assure that organic fertilizers are well composted to avoid survival of weed’s seeds or harmful pests and their spores or eggs.
Monitoring

Keep under control the presence of harmful pests on the crops or identify favorable conditions for their growth or reproduction.

1. Establish monitoring techniques and appropriate indicators to be checked

**Examples of actions:**

- Establish Monitoring frequency
- Establish what to verify to assess presence of harmful pests
- Establish the best conditions for the pests to start and complete their life cycle (ex: growth stage of the crop, climate conditions, etc...)
- Identify scouting techniques according to different targets (ex: fungus or insects) and their life habits
- Use of special tools to detect presence of pests or to measure climate conditions (ex: pheromone traps, color attractive traps, or local meteo station)
- Record results of monitoring

2. Establish intervention thresholds

- According to scientific and practical experience establish the level of tolerance acceptable for presence of harmful pests before moving to the following step: intervention.
**Intervention**

This is the last step to be applied for plant protection from harmful pests.

Intervention has the scope to control and reduce the population of pests infesting the Crops.

Different methods of control can be applied:

**Examples:**

1. Use of pest’s natural enemies
2. Use of products allowed for organic agricultural productions
3. Use of Plant protection products registered for the crops and target in country of production

**Not allowed:**

to use banned products and substances in WHO Class 1a and 1b, WHO class II and all highly hazardous chemical substances under the Stockholm convention on persistent organic pollutants (Pops Convention)
Principle 6.12: Energy Efficiency

To ensure efficient use of energy

What is required to comply with AES Standard?

develop an energy efficiency plan to:

⇒ determine and document the actual energy used for farm operation
⇒ define goals to improve the use of energy (reduction, optimization...)
⇒ implement activities towards
  ▪ increased efficiency,
  ▪ reduced dependency on non-renewable sources
  ▪ increased use of renewable energy.

Keep record on use of energy and related management
Principle 13: Waste and Pollution Management

To ensure the responsible management of wastes and pollutants

What is required to comply with AES Standard?

⇒ identify and document all elements of waste and pollutants generated by the enterprise.
  ▪ classify all the wastes and pollutants generated by the enterprise
  ▪ Make a list
⇒ Develop an integrated waste management programme:
  ▪ adopt best practices for each class
⇒ implement the program based on the concept of the waste management hierarchy:
  ▪ avoidance
  ▪ reuse
  ▪ recycling and reprocessing.
  ▪ waste treatment and waste disposal
⇒ ensure proper management of unavoidable pollution and waste.
  ▪ especially the disposal of obsolete pesticides and chemicals.
  ▪ To the extent possible restrain from the use of open waste dumps and open-air burning of waste
Principle 14: Handling and Segregation of Certified Products

To ensure the integrity of certified products throughout the phases of handling, storage, processing and transport.

What is the Scope for this chapter?

⇒ To keep track of the AES Agriculture certified product from farm and along the supply chain (use of Ecolabel is included)
⇒ To link products to all information related to production and field of production

How do I comply with AES Standard?

⇒ Keep record of all inputs used for production and link to sales documents and delivery
  Example: seeds, fertilizers, pesticides...
⇒ Collect sales documents, certificates of analysis or other declaration of compliance for the materials supplied
  Examples:
  ▪ Delivery documents/ invoices or other documents proofing the origin of the materials
  ▪ pest-free certificates for planting materials
  ▪ labels of fertilizers and pesticides
  ▪ testing of fertilizer’s contents
⇒ clearly identify certified products as certified
  Examples:
  ▪ label only certified products as AES Ecolabel Agriculture Certified
  ▪ identify products in traceability documents and sales documents
⇒ a system for segregation of certified and not-certified products is in place
  ▪ avoid mixing of certified and not-certified products
  ▪ evidence of segregation
Principle 15: Animal Husbandry

To develop and implement policies, programs and procedures for managing acquisitions, productivity and trading of the animal and animal products by the enterprise and records maintained.

Traceability of animals and link to their direct information:

⇒ Records of breeding or acquisition (parental origins)
⇒ Quarantine programs in case of infections
⇒ Programs to avoid over-stocking
  ▪ The size of the stock must be sustainable for the farm resources and for the animals
⇒ Programs to avoid grazing where is not allowed or in quantity above the level of sustainability for the environment

Animal welfare

⇒ Protection from adverse weather conditions and prevent infectious diseases
⇒ Implement a Health and feeding plan specific for the scope
⇒ Store feed to avoid contamination and deterioration
⇒ Housing adequate to species
⇒ Use of growth promoters and medicines allowed by law
  ▪ Keep records (name of medicine, date, dosage/ rate of products
⇒ Develop and implement appropriate transportation procedures approved by competent local Authorities