Food and Agriculture Organization
of the United Nations

HACCP – STEP 11, PRINCIPLE 6

VALIDATION
AND
VERIFICATION

FAO Good Hygiene Practices (GHP) and
Hazard Analysis and Critical Control Point
(HACCP) Toolbox for Food Safety

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Technical note for readers

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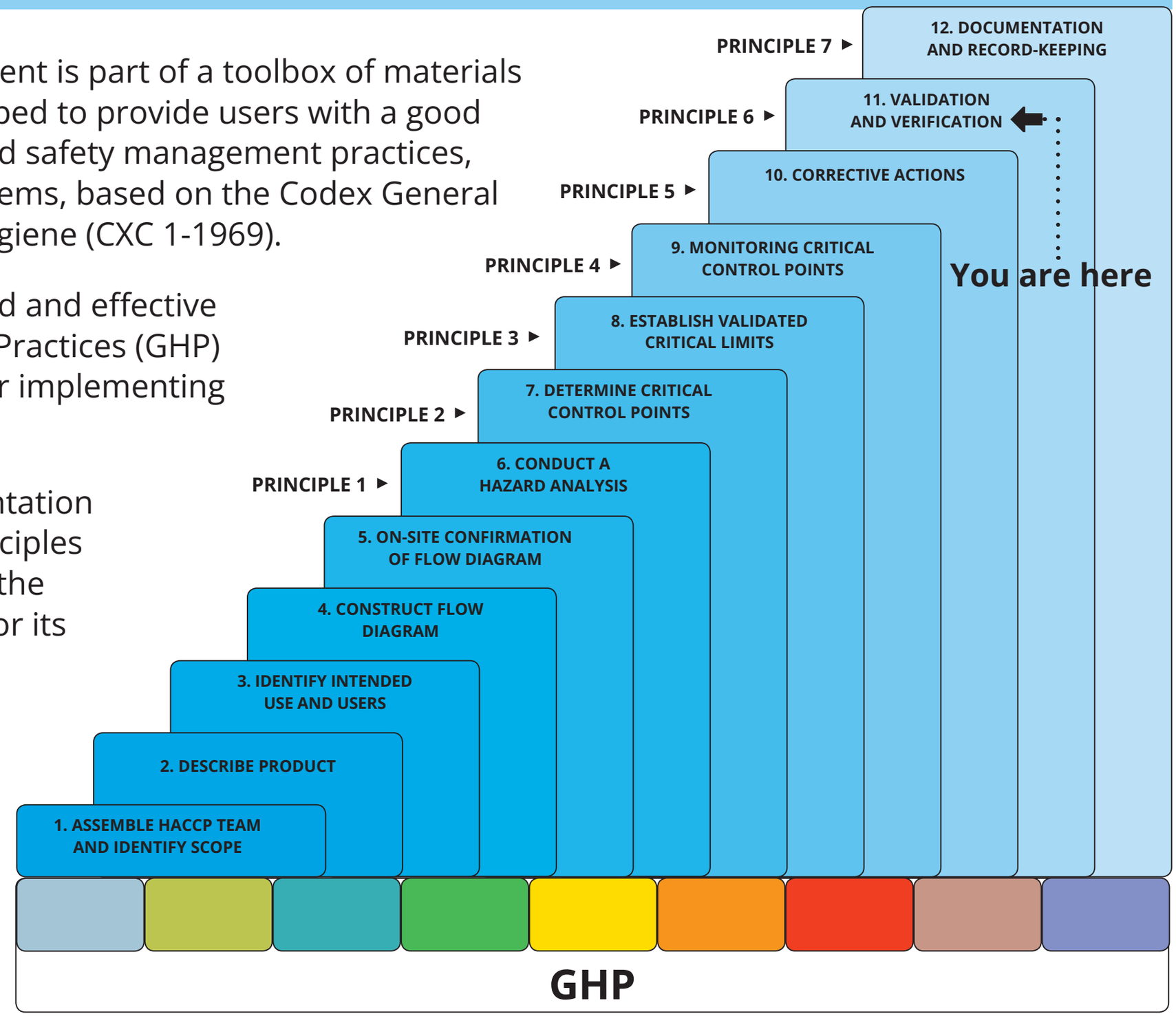
VALIDATION AND VERIFICATION

INTRODUCTION

This guidance document is part of a toolbox of materials and has been developed to provide users with a good understanding of food safety management practices, including HACCP systems, based on the Codex General Principles of Food Hygiene (CXC 1-1969).

Well established and effective Good Hygiene Practices (GHP) set the foundation for implementing a HACCP system.

This graphic representation shows the seven principles of HACCP along with the 12 successive steps for its application.



VALIDATION AND VERIFICATION

CONTEXT

Before the HACCP plan can be implemented, it should be **validated** to confirm that it can ensure consistent control of the significant hazards relevant to the food business under production conditions. Validating the HACCP plan could include a review of the scientific literature, using mathematical models, conducting validation studies, and/or using guidance developed by authoritative sources. Where HACCP guidance is developed by external experts, care should be taken to ensure that these critical limits fully apply to the specific operation, product or groups of products under consideration.

After the HACCP system has been implemented, procedures should be established to verify that the HACCP plan is being followed and that it is controlling hazards on an ongoing basis. There should also be procedures to show that the control measures are effectively controlling the hazards as intended. **Verification** also includes reviewing the adequacy of the HACCP system periodically and when changes occur, as appropriate. Any changes having a potential impact on food safety require a review of the HACCP system, and, when necessary, a revalidation of the HACCP plan.

Learning objectives

This document provides guidance on how to:

- establish procedures for verifying control at each of the CCPs and for validating the adequacy of the overall HACCP plan prior to implementation; and

- **document this step as part of the HACCP plan.**

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Principle 6: Validate the HACCP plan and then establish procedures for verification to confirm that the HACCP system is working as intended

Codex definitions:

Validation of control measures: Obtaining evidence that a control measure or combination of control measures, of properly implemented, is capable of controlling the hazards to a specified outcome.

Verification: The application of methods, procedures, test and other evaluations, in addition to monitoring, to determine whether a control measure is or has been operating as intended.

Validation and verification work together and can be considered a means of continuous improvement of the HACCP plan.

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Validation of the HACCP plan

Validation of the HACCP plan should occur **before implementation** and is an essential step to obtain evidence that the elements of the plan are capable of controlling the significant hazards relevant to the food business.

HACCP plan validation will ensure that:

- hazards significant for the safety of the product and the process have been identified;
- critical control points (CCPs) have been correctly identified;
- critical limits are defined for CCPs and validated;
- non-CCP control measures are operating effectively;
- the frequency and type of monitoring of CCPs is able to identify when the process is not operating according to critical limits;
- corrective actions will prevent the release of unsafe food and minimize recurrence;
- the frequency and type of verification is able to confirm compliance with the HACCP plan; and
- the type of information recorded will be sufficient to demonstrate historical proof of compliance with the HACCP plan.

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Who can support validation activities?

- the HACCP team;
- staff with specific technical expertise (for example, the person in charge of the maintenance of electronic equipment); and
- external experts, as needed.

Information needed to validate the HACCP plan often includes:

- collecting and evaluating scientific, technical and observational information (such as, scientific literature, mathematical models, conducting validation studies, and/or using guidance developed by authoritative sources); and
- evidence obtained during implementation of the HACCP system.

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Revalidation of the HACCP plan

Any changes in the process that could have an impact on food safety require a review of the HACCP system and, when necessary, the revalidation of the HACCP plan.

Examples of such changes are:

- new product formulation or new raw materials;
- new scientific information about a hazard (such as, an outbreak of food-borne disease linked to a novel food source) and new control measures;
- regulatory changes or changes in the requirements of importing countries;
- use of new processing technologies or equipment;
- consumer complaints regarding product safety; and
- recuring deviations or unsatisfactory audit findings.

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Verification procedure

Verification is more than monitoring. It answers the question: Am I confident that my food safety system is controlling hazards as intended and that my HACCP plan is being complied with?

Verifying the HACCP system is essential to ensuring that it operates effectively. This includes ensuring that the HACCP plan is being followed, that hazards are being controlled continuously and that the control measures are controlling the hazards as intended.

Verification activities include:

- HACCP plan validation
- HACCP system audits
- equipment calibration
- targeted sample collection and testing

Verification is an ongoing activity, which should be initiated once the HACCP system is fully functional.

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Codex examples of verification activities:

- reviewing monitoring records to confirm that CCPs are kept under control;
- reviewing corrective action records, including specific deviations, product disposition and analysis conducted to determine the root cause of the deviation;
- calibrating or checking the accuracy of instruments used for monitoring and verification;
- observing control measures to determine if they are being conducted according to the HACCP plan;
- sampling and testing, for example, for microorganisms (pathogens or their indicators), chemical hazards such as mycotoxins, or physical hazards such as metal fragments, to verify product safety;
- sampling and testing the environment for microbial contaminants and their indicators, such as *Listeria spp*.; and
- reviewing the HACCP system, including the hazard analysis and the HACCP plan (for example, by means of internal and/or third-party audits).

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Who can support verification activites?

- an individual within the food business who is not responsible for performing the monitoring and corrective actions; and/or
- external experts or qualified third-party auditors.

Frequency of verification activities

Verification activities should be performed:

- as a routine operation; or
- according to a pre-established schedule described in the HACPP plan; or
- whenever changes that can affect food safety occur.

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Documenting verification activities

Verification procedures should be documented as part of the HACCP plan, and the results of all verification activities should be recorded. Records of verification activities should include methods used, date of the activity, individuals or organizations responsible, results or findings and actions taken. (See Supporting documents for templates and examples.)

For additional information, please consult the **Further reading** section accessible from the **SECTION LANDING PAGE**.

VALIDATION AND VERIFICATION

EXERCISE: FOOD SAFETY FOR THOUGHT

This is the little “game” we created. This will apply to all HACCP steps, except the intro.

11. VALIDATION AND VERIFICATION

GHP are fundamental to the sucessful application of HACCP.

Think of a food operation that you are familiar with, and select those GHP elements that you feel are most relevant for the application of HACCP step 11.

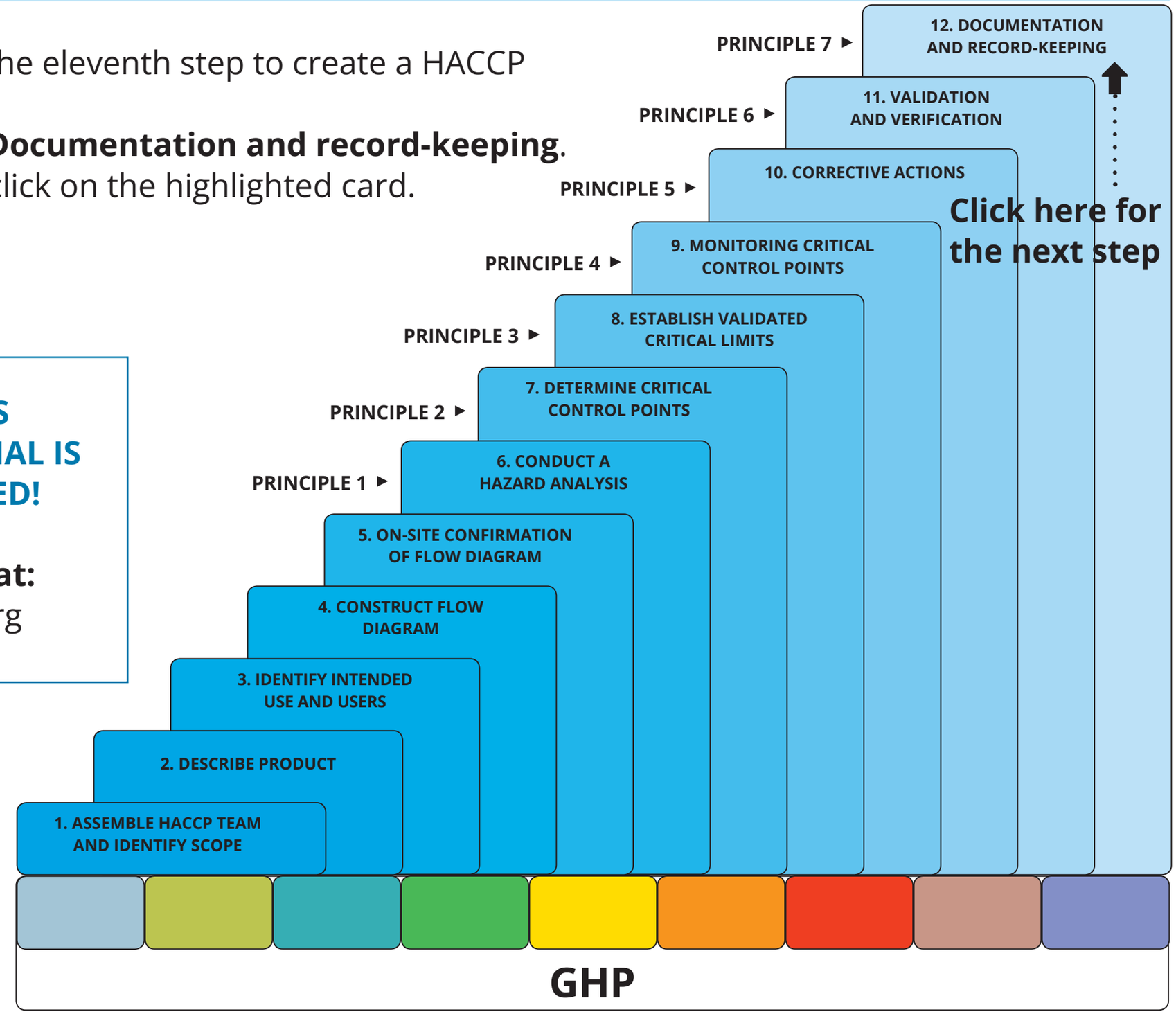
GHP PROGRAMMES	✓
1. INTRODUCTION AND CONTROL OF FOOD HAZARDS	☐
2. PRIMARY PRODUCTION	☐
3. ESTABLISHMENT - DESIGN OF FACILITIES AND EQUIPMENT	☐
4. TRAINING AND COMPETENCE	☐
5. ESTABLISHMENT MAINTENANCE, DISINFECTION, AND PEST CONTROL	☐
6. PERSONAL HYGIENE	☐
7. CONTROL OF OPERATION	☐
8. PRODUCT INFORMATION AND CONSUMER AWARENESS	☐
9. TRANSPORTATION	☐

Please explain your choices.

VALIDATION AND VERIFICATION

KEEP READING

You have completed the eleventh step to create a HACCP system.
The next step will be **Documentation and record-keeping**.
To continue reading, click on the highlighted card.



FEEDBACK ON THIS GUIDANCE MATERIAL IS ALWAYS WELCOMED!

Please contact us at:
food-quality@fao.org

KEEP READING

GHP and HACCP Toolbox for Food Safety
www.fao.org/good-hygiene-practices-haccp-toolbox

FOOD SYSTEMS AND FOOD SAFETY –
ECONOMIC AND SOCIAL DEVELOPMENT
www.fao.org/food-safety

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS
ROME, ITALY

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