

NSQF QUALIFICATION FILE GUIDANCE

Version 1: Draft of 27 July 2017

NSDA Reference

To be added by NSDA

CONTACT DETAILS OF THE BODY SUBMITTING THE QUALIFICATION FILE

Name and address of submitting body:

Ministry of Environment, Forest and Climate Change
Indira Paryavaran Bhawan, Jor Bagh Road,
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List of documents submitted in support of the Qualifications File

1. Documentary Evidence of Need- (information is being collected and is awaited)
2. Curriculum with training plan
3. One Research Paper and one article showing evidence of need

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SUMMARY

| | |
|---|---|
| Qualification Title | Certificate course on Biodiversity conservation |
| Qualification Code | - |
| Nature and purpose of the qualification | <p>Nature of the qualification: Certificate course in Biodiversity Conservationists.</p> <p>Purpose of qualification: Para taxonomy is the use of less qualified assistance to, or replacement of, taxonomists in the practice and science of classification. Under the above said programme, a candidate who has not undergone higher education beyond Class X/XII will be inculcated with skills to identify plants/animals based on key field characteristics for locally available flora and fauna. This will be a basic course for 3 months.</p> |
| Body/bodies which will award the qualification | MoEF&CC |
| Body which will accredit providers to offer courses leading to the qualification | MoEF&CC |
| Body/bodies which will carry out assessment of learners | BSI, ZSI and SACON |
| Occupation(s) to which the qualification gives access | Nature guides/Conservationists/ Eco-tourist guides |
| Licensing requirements | Nil |
| Level of the qualification in the NSQF | Level 4 |
| Anticipated volume of training/learning required to complete the qualification | 420 hours (Theory- 170 hours Practical- 250 hours) |
| Entry requirements and/or recommendations | Class X th Pass/Class XII th Pass/ dropouts |
| Progression from the qualification | Advanced Course in Parataxonomists, Level 6 |
| Planned arrangements for the Recognition of Prior learning (RPL) | There is no arrangement of RPL as of now |
| International comparability where known | Not known |
| Date of planned review of the qualification. | March 2020 |

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| Formal structure of the qualification | | | |
|---|--------------------------------|--|--------------|
| Title of component and identification code. | Mandatory/ Optional | Estimated size (learning hours) | Level |
| (i) Introduction to Biodiversity: Definition of biodiversity-Taxonomy and its relevance to biodiversity studies- Role of Para taxonomists | M | 35 | 4 |
| (ii) Introduction to Floral diversity of India | M | 35 | 4 |
| (iii) Introduction to Faunal diversity of India | M | 35 | 4 |
| (iv) Economic botany, Medicinal plants and Traditional Knowledge | M | 70 | 4 |
| (v) People's Biodiversity Register (PBRs) for Sustainable Development | M | 35 | 4 |
| (vi) Wetlands Ecosystem | M | 35 | 4 |
| (vii) Horticulture and Nursery Techniques | M | 35 | 4 |
| (viii) Conservation issues and efforts (Laws, rules and regulations) | M | 35 | 4 |
| (ix) Nature guide training | M | 35 | 4 |
| (x) Basic Computer Skills and GIS Theory and Practical | M | 35 | 4 |
| (xi) Other Field work/visits, hands-on training | M | 35 | 4 |

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SECTION 1 **ASSESSMENT**

Body/Bodies which will carry out assessment:

The assessments will be carried out by the Evaluators of BSI/ZSI/SACON. These evaluators would be chosen from the experts who are not a part of the trainers. Based on the evaluation, certificates will be issued.

How will RPL assessment be managed and who will carry it out?

No RPL in this programme.

Describe the overall assessment strategy and specific arrangements which have been put in place to ensure that assessment is always valid, reliable and fair and show that these are in line with the requirements of the NSQF.

The assessment will be done through theory, practical and viva exams at the end of the course. Moreover, students will be assessed regularly through questionnaires on every module in the classroom.

For practical examination, the trainers as well as course supervisors will constantly keep a vigil on the trainees. Any errors committed by the trainees will be corrected then and there; a learning by doing technique will be adopted for practical assessment.

In theory, a final examination will be conducted at the end of the course, in which 50% scoring will be considered to be as qualifying marks. The Assessments will be conducted through English/Hindi Questionnaires. However, the Invigilators (not Trainers/Supervisors) will be empowered to explain/translate the question to the trainees in their regional language, if required. The trainers will not be involved in the assessment, whatsoever, at any point.

ASSESSMENT EVIDENCE

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Title of Component: Biodiversity Conservationist – Foundation Course

| Learning Outcome | Assessment outcome description | Assessment criteria for the outcome |
|--|---|--|
| 1. Understand Biodiversity | <p>The trainee will be able to</p> <ul style="list-style-type: none"> Describe basics on Biodiversity and Bio-geographical regions of India Describe various vegetation types in India Describe major ecosystems in India, hotspots & protected areas of India, Endemism and Conservation of Biodiversity. | By conducting Evaluation Test |
| 2. Introduction to Floral Diversity of India | <p>The trainee will be able to</p> <ul style="list-style-type: none"> Describe and identify basic classification of plants about local flora with their local and scientific names <p>Describe the concept of species, Rare, Endangered and Threatened Plants and threat causes in particular</p> <p>Conducting experiments for understanding angiosperm morphology.</p> <p>Describe and indentify plant kingdom and their threat factors.</p> | Based on Evaluation Test in both Theory and Practical |
| 3. Introduction to Faunal Diversity of India | <p>The trainee will be able to</p> <p>Identify basic classification of animals</p> <p>Understand how to collect and preserve animals, local fauna with their local and scientific names,</p> <p>Identify Rare, Endangered and Threatened animals and major threat is in particular region, harmful and beneficial animals</p> <p>Understand major animal phyla and their Threat Factors.</p> | By conducting both Theory and Practical Evaluation Test |
| 4. Knowledge of Economic Botany, Medicinal Plants and Traditional Knowledge | <p>The trainee will be able to</p> <p>Understand about Economic Botany, Medicinal Plants and Traditional Knowledge, important folk names, sacred groves and components,</p> <p>Apply herbarium techniques, practical demonstration.</p> <p>Distinguish weeds and useful plants.</p> <p>Explain preservation techniques of plant specimens.</p> | Both Theory and Practical Evaluation Test |
| 5. Maintenance and record of People's Biodiversity Register (PBRs) for sustainable development | <p>The trainee will be able to</p> <ul style="list-style-type: none"> Understand various Traditional knowledge for PBRs preparation; Legal protections and implications Explain the role of State Biodiversity Board (SBB) and Biodiversity Monitoring Committee (BMC) in PBR preparations Understand PBRs and Legal Protections of Biodiversity. | Based on Theory Evaluation and Documentation of Traditional Knowledge (TK) in Practical. |
| 6. Wetland ecosystem | <p>The trainee will be able to</p> <ul style="list-style-type: none"> Understand about wetlands, different types of wetland, physio-chemical properties of wetlands, Identify various species inhabitants in wetlands and importance of wetlands | Based on theory and practical evaluation |

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| 7. Horticulture and Nursery Techniques | <p>The trainee will be able to</p> <p>Prepare land for cultivation, various methods of raising plants, vegetative propagation methods, composting and understand basics of Tissue culture</p> <p>Conduct conservation of the plants in local park</p> | By conducting practical evaluation |
| 8. Conservation issues and efforts | <p>The trainee will be able to</p> <p>Understand environmental issues of their region, various conservation methods, biodiversity acts</p> <p>Explain laws, rules and regulations</p> | By Evaluation through Theory Questions |
| 9. Nature Guide | <p>The trainee will be able to</p> <ul style="list-style-type: none"> • Understand ecotourism and role of nature guide including interaction with visitors • Act as Nature guides. | By Evaluation Test-theory and practical |
| 10. Basic Computer Skills and GIS | <p>The trainee will be able to:</p> <ul style="list-style-type: none"> • Understand basics of Computer including MS Office, Internet, e-mail and GIS and OSM are taught. • Understand the various uses of Software including GIS | By Evaluation through Practical Test |
| <p>Means of assessment 1</p> <p>Theory and Practical exam on field and through Viva-voce</p> | | |
| <p>Means of assessment 2</p> <p>Set up of relevant and qualitative questions, Multiple Choice Questions (MCQ) for theory assessment. Conducting practical exams on selective Modules.</p> | | |
| <p>Pass/Fail</p> <p>The pass mark for Theory exam (Multiple Choice Questionnaire) will be 50 out of 100. In Practical, 75 marks for Practical exam and 25 marks for viva-voce. Pass mark will be 50 marks but in Practical exam Trainee should score at least 40 marks out of 75.</p> | | |

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SECTION 2

EVIDENCE OF LEVEL

| Title/Name of qualification/component: Certificate course on Biodiversity Conservation Level: 4 | | | |
|---|---|---|------------|
| NSQF Domain | Outcomes of the Qualification/Component | How the job role relates to the NSQF level descriptors | NSQF Level |
| Process | Trainees would get the overall idea of Biodiversity. Flora and Fauna components are well identified by the Trainees. Different types of wetlands, their properties and importance are learnt by the Trainees. They are able to identify economically important plants, Medicinal plants on the field; trainees are able to collect the data on Traditional Knowledge in a particular area. Gaining knowledge about various environmental issues of their region, various laws, rules and regulations of environment, conservation methods. | Biodiversity Conservationist has factual knowledge of Biodiversity and their components. They are required to activities which are routine and predictable- like identifying flora and fauna, maintaining PBRs etc. Basic knowledge of wetland habitats and conservation techniques will be taught. Segregation of medicinal plants and economically important plants will be taught for conservation. | 4 |
| Professional knowledge | Trainees are able to collect data on flora and fauna, Traditional Knowledge, local names of plants, preservation of biological specimens. Also gain knowledge of People's Biodiversity Register (PBR), Legal protections and the role of State Biodiversity Boards and Biodiversity Management Committees in PBR preparation. Preparation of land, raising plants from seeds, various vegetative propagation methods, manuring, watering and composting methods are learnt by the trainees- knowledge not limited to local areas. Learning of major environmental issues, community conservation issues, protected areas, biodiversity acts, flora and fauna. Know about the definitions of nature trail, Nature Guide and ecotourism, how to interact with the visitors. | Factual knowledge of flora and fauna, local names and preservation of specimens are part of the job profile. PBR preparation for sustainable development is part of the course. They would be trained on rules and regulations to implement the laws to protect the environment. Biodiversity acts, wetland laws, flora and fauna in scheduled list of Wildlife Protection Act, Non-timber Forest Product knowledge are essential for Biodiversity Conservationists. As factual knowledge as well knowledge of field will be given, this will suit Level 4 | 4 |
| Professional skill | Biodiversity Conservationists are able to independently handle the raising of important plant species in local parks, with the knowledge gained on horticulture and nursery techniques. They | As the job would require practical skill and knowledge and it would be repetitive in nature, therefore it matches with level 3 descriptor. | 4 |

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| NSQF Domain | Outcomes of the Qualification/Component | How the job role relates to the NSQF level descriptors | NSQF Level |
| | <p>will be able to routinely identify various species of flora and fauna, help in conservation, and in maintaining PBRs.</p> <p>During the tourist season the trainees can also act as volunteers for Nature Guides, Eco-tourists, etc. The conservationists can handle independently the cultivation of Rare and Endangered plants.</p> <p>Trainees will be able to assess the Biodiversity, its threat factors, environmental issues, laws, rules and regulations to be implemented in legal protections and in conservation efforts.</p> | | |
| Core skill | <p>In terms of core skills acquired, trainees will gain basic knowledge of computers, MS Office, GIS and other software. They are required to have some working knowledge of English as well for personnel interaction and maintenance of daily records of visitors.</p> | <p>As the communication both oral and written will be required to carry out the activities related to documentation of flora and fauna as well as Nature guides, along with basic knowledge of computer and English, Level 4 descriptor matches this skill</p> | 4 |
| Responsibility | <p>Biodiversity Conservationists are able to independently handle the raising of important plant species in local parks, to assess the major environmental issues of his/her region, initiate community conservation, protect Sacred Groves of his/her region, In-situ conservation of biologically rare species. They are able to stop the illegal cutting, uprooting, felling and trading of the plants, trafficking of animal species.</p> | <p>The trainees will be able to work under minimum supervision; therefore level 3 is being allocated.</p> | 3 |

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SECTION 3

EVIDENCE OF NEED

What evidence is there that the qualification is needed?

A research report by M.D. Subhash Chandran, T.V. Ramachandra and Prakash N. Mesta, published by Centre for Ecological Sciences is attached. It highlights the huge potential for harnessing the student power for documentation of the immense biodiversity of the country. The identification, various types of living organisms, their role in ecosystem, etc. are pertinent to conserve the Biodiversity.

Another article by Nematode Research Laboratory, Department of Zoology, Aligarh Muslim University shows the importance of studying taxonomy in recent times both for awareness as well as employment generation. This study was published in 2014 and has been attached.

What is the estimated uptake of this qualification and what is the basis of this estimate?

The programme, one of its kind, has been initiated on pilot basis in 2017-18. We had projected an uptake of 100 students. The course is currently training 70 students enrolled in 9 bio geographic regions of the country. We have received encouraging feedback and the course has been highly appreciated. There have been minimal drop outs in the programme so far. We therefore expect a rise of 25% every year.

What steps were taken to ensure that the qualification(s) does (do) not duplicate already existing or planned qualifications in the NSQF?

National Qualifications Register was searched to assess if there was any similar qualification programme initiated in this field. The NSDA officials were also consulted a couple of times wherein it was mentioned that such a programme has not been introduced anywhere in the country.

What arrangements are in place to monitor and review the qualification(s)? What data will be used and at what point will the qualification(s) be revised or updated?

Feedback would be taken from experts, students and teachers regarding the course content, structure and timeline of the programme. Feedback will also be taken from the Centres conducting the course. Changes suggested will be assessed by the Ministry before incorporating them in the curriculum. Next review will be done in March 2018.

Please attach any documents giving further information about any of the topics above.

Give the titles and other relevant details of the document(s) here. Include page references showing where to find the relevant information.

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SECTION 4

EVIDENCE OF PROGRESSION

What steps have been taken in the design of this or other qualifications to ensure that there is a clear path to other qualifications in this sector?

Foundation Course certificate holders will be eligible to apply for the Advanced course in parataxonomy. These advanced course certificate holders will be eligible to become Master trainers through on the job training in this field. They will be able to assist ground truth verification of various schemes of the Ministry as well as be employed in BSI and ZSI as per need. These certificate holders are also free to take up any other training course in the field of environment protection and conservation that the Ministry plans to conduct in the future.

