

# **Functional Requirement Specifications for Central Knowledge Repository**

## **Objective**

The objective of these Functional Requirement Specifications (FRS) is to establish a systematic framework for the creation, management, access, and dissemination of knowledge in the Supreme Audit Institution of India (SAI India) through a Central Knowledge Repository (CKR). These FRS aims to streamline the flow of knowledge in the CKR and timely updating of CAG's knowledge resources, leading to the creation of a well organised, easily accessible and comprehensive knowledge repository. Such a repository is expected to make immense contributions towards enhancing the efficiency and effectiveness of SAI India by facilitating better informed decision-making, structured knowledge sharing, and organizational learning.

## **Scope of the FRS**

The FRS for CKR will cover the key processes in the following key areas:

- A. Repository structure and organisation/ Knowledge Structure in the CKR
- B. Content creation
- C. Content submission
- D. Content approval and Publishing
- E. Access Control
- F. Dissemination through CKR/Search and retrieval
- G. Feedback, Periodic Review and Archiving

### **A. Repository structure and organisation**

All the knowledge in the CKR will be tagged and organized under well-defined hierarchical Categories as under:

1. Main Categories
2. Sub-Categories
3. Subordinate Categories

The following have been identified as the Categories under which the knowledge will be organised:

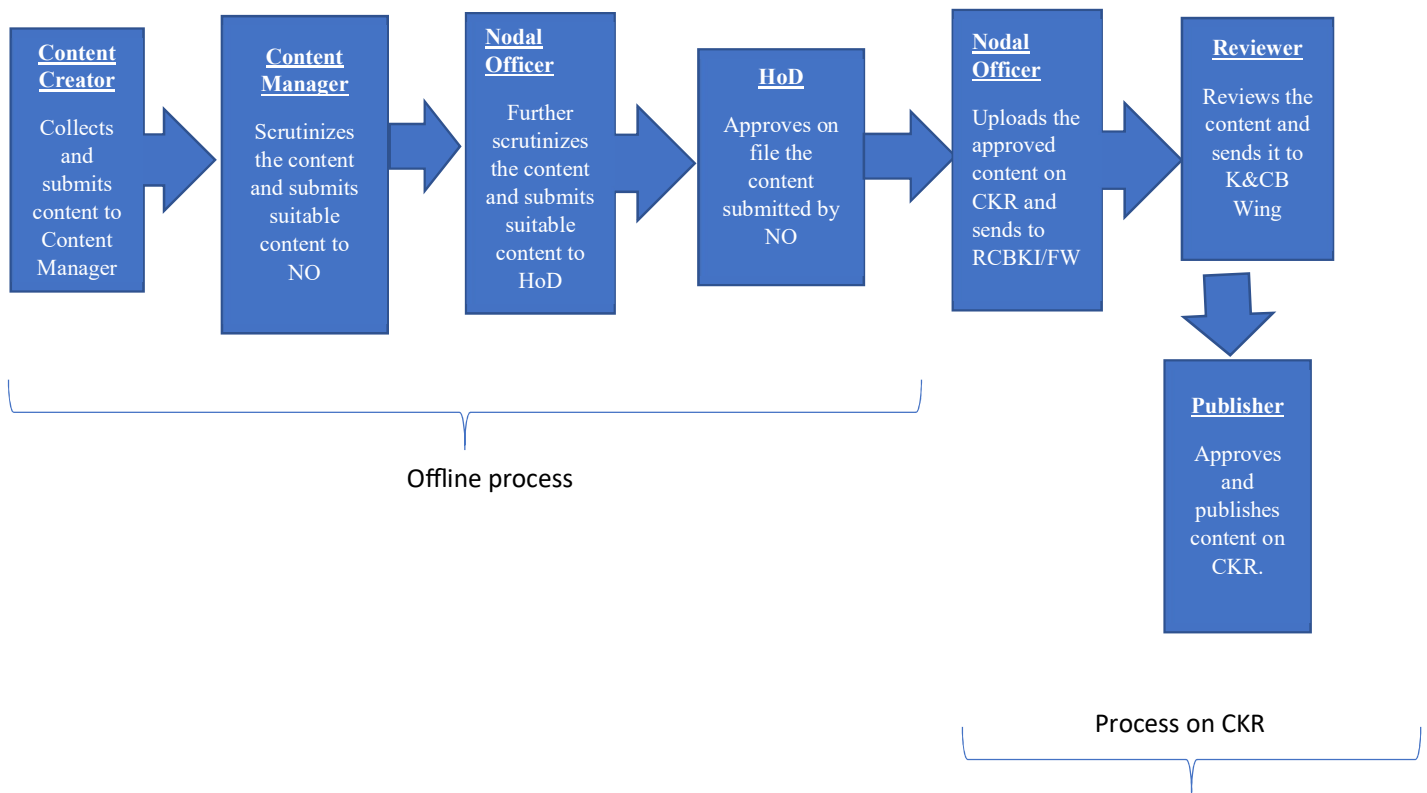
1. Main Categories
  - a. Mandate and Organisation
  - b. CAG's Speeches
  - c. Sectoral Resources for Audit
  - d. Accounts
  - e. GASAB
  - f. HR and Legal
  - g. Global Footprints
  - h. AsG Conference and Audit Diwas
  - i. Miscellaneous
2. Sub Categories under the Main Categories
  - a. Mandate and Organisation
    - i. Constitutional provisions
    - ii. Mandate of the CAG
    - iii. DPC Act
    - iv. Regulations on Audit and Accounts
    - v. Structure of IAAD
    - vi. Functional Classification
  - b. CAG's speeches
    - i. AsG Conference
    - ii. Audit Diwas
    - iii. SCO meeting
    - iv. SAI20
    - v. INTOSAI
    - vi. United Nations
    - vii. ASOSAI
    - viii. BRICS
    - ix. Others
  - c. Sectoral Resources for Audit
    - i. Finance
    - ii. Science and Technology
    - iii. Environment and Sustainable development
    - iv. Industry and Commerce
    - v. Agriculture and Rural Development

- vi. Social welfare
- vii. Defence and National Security
- viii. Information Technology and communication
- ix. Power and Energy
- x. Transport and infrastructure
- xi. Taxes and Duties
- xii. Local Governance
- xiii. General sector ministries
- xiv. Autonomous bodies
- xv. Education, health and Family Welfare
- xvi. Social infrastructure
- xvii. Fraud and Forensic audit
- xviii. Railways
- xix. Miscellaneous
- d. Accounts
  - i. Government Accounts
  - ii. Pension and GPF
  - iii. Treasury Inspection (Rules, guidelines, manuals etc.)
- e. GASAB
  - i. Government Accounting Standards
  - ii. Natural Resource Accounting (NRA)
- f. HR and Legal
  - i. Administration and HR matters
  - ii. RTI, Legal, Disciplinary and Vigilance matters
  - iii. Strategy Management, Professional Practices and Coordination
  - iv. Media Policy
  - v. Employee Entitlements
  - vi. Estate and Welfare
  - vii. Training/Capacity Building: Link to the SAI Training Portal will inter alia be given here
- g. Global footprints
  - i. International guidance
  - ii. International best practices
  - iii. Bilateral Engagement

- iv. Multilateral Engagement
  - v. Collaborations with MEA
  - h. AsG Conference and Audit Diwas
    - i. AsG conference listed according to the years held
    - ii. Audit Diwas listed according to the years held
3. Subordinate` Categories: Subordinate Categories will be created under the sub categories wherever required. Some of the examples are as follows:
- a. Subordinate categories of Performance Audit, Compliance Audit and Financial Audit will be created under each of the sub categories under the ‘Audit’ category.
  - b. Subordinate categories of Seminars, Meetings, Workshops, Trainings will be created under the sub category ‘Bilateral Engagement’ under ‘International Footprints’.
  - c. Subordinate categories of INTOSAI Working Groups, ASOSAI, SAI 20, SCO, BRICS will be created under the ‘Multilateral Engagement’ sub category under the same category and will be further divided into Seminars, Meetings, Workshops and Trainings.
  - d. A subordinate category of ‘Audit Diwas and Audit Week celebrations in the field offices’ will be created under the ‘Audit Diwas’ subcategory under ‘AsG Conference and Audit Diwas category’.
  - e. Subordinate category of ‘Media coverage’ will be added wherever applicable.
  - f. Subordinate categories of Acts, laws, Judgements and manuals will be added wherever relevant.
4. Knowledge Entries (any content or material that is submitted on the CKR will be known as a Knowledge Entry) will be uploaded as per the categories of the CKR. Every Knowledge Entry must be carefully placed in the appropriate Knowledge Category. The Knowledge Entries within each Knowledge Category will be clearly tagged by a set of keywords decided appropriately by the creator and duly reviewed and approved by the competent authority. Each Knowledge Entry will be cross referenced under relevant categories, sub categories or subordinate categories. The Knowledge Entries available on the CKR will be sortable by date of upload, name, size in both ascending and descending order.

## B. Content creation

1. A critical aspect of maintaining an effective knowledge repository is defining the roles and responsibilities of individuals within the organization. This includes defining who is responsible for creating and reviewing knowledge. These FRS defines the various collaborators involved in identifying, proposing, reviewing, submitting and approving potential knowledge to be added to the CKR. The flow of Knowledge through these collaborators will be as under:



- **Content Creator (Off CKR):** The individuals responsible for Knowledge identification and creation.
  - Field offices
  - Key resource persons at Central Training Institutes, Regional Capacity Building and Knowledge Institutes/Centres.
  - Functional wings at CAG Headquarters
  - IR Wing for an international perspective and important developments in the international audit universe.

- SMU/PPG/Synchronisation- for cross cutting matters and for policy related documents
  - YPs/Consultants engaged for specific research projects through their Functional Wings
  - Knowledge and Capacity Building wing
- **Content Managers** (Off CKR): Each field office will nominate Group-wise Content Management teams, headed by the GO concerned of the Group, who will be responsible for the initial scrutiny and examination of the Knowledge Entry submitted by anyone in the group. Hence, Field Offices may have multiple 'Content Management teams' corresponding to the different groups of the field office. For RCBKIs/RCBKC's or Functional Wings, which do not have group officers, Sr. AOs will head the Content Management teams.
- **Nodal Officer** (Off and On CKR): A Nodal Officer is to be nominated by the HoD of each Field Office/ Functional Wing. For small offices with only one group officer, the same group officer can be both the Content Manager and the Nodal Officer for the office. The Nodal Officer role will be assigned by the HoD through the 'Role Manager' module of the CKR.
- **Head of Department:** The HoD will sign off any content or material before it can be sent for review.
- **Reviewer** (On CKR): The RCBKIs/RCBKC's will act as Reviewers of the Knowledge Entries for their respective Knowledge Centre topics. For a proposed Knowledge Entry, which does not come under any of the Knowledge Centre topics, the concerned Functional Wings will act as the reviewers on the CKR. The K&CB Wing can also act as the Reviewer in case a Knowledge Entry is proposed by a HoD and does not pertain to any RCBKI/C or Functional Wing. The 'Reviewer' shall be identified/mapped category/sub-category wise on the 'Role Manager' module of the CKR.
- **Approver/Publisher** (On CKR): The K&CB wing is responsible for publishing the submitted Knowledge on the CKR for dissemination.

2. **Nature of Content:** Content can include documents, reports, manuals, guides, best practices, case studies, videos, photographs and any other knowledge resources deemed valuable.
3. **Format of the content to be submitted:** The content should be submitted in the specified format. The creator must ensure that no part of the content is lost or distorted in the process.
4. **Knowledge resources:** Some of the knowledge resources are as follows:
  - Mandate of CAG, DPC Act 1971, Regulation on Audit and Accounts
  - CAG's speeches
  - Audit Reports, Compendiums
  - CAG's international bilateral and multilateral working papers
  - IAAD Guidelines which have been developed by the department to provide guidance on various aspects of its work, such as Performance Audit Guidelines, Compliance Audit Guidelines, Data Analytics Guidelines, etc.
  - MSOs, other manuals, Procedures, Rules and Circulars
  - HR Policies/circulars, Appointment related Guidelines, Recruitment Rules
  - RTIs, Legal and Vigilance matters
  - Auditee Department's Policy document/Monitoring reports/Performance reports/Annual reports/Outcome budgets/MOUs/Handbooks/Result Framework Documents
  - Scheme's guidelines/circulars/feasibility reports
  - Social Audit reports and primary Auditors reports, Internal audit reports, Peer Review Reports
  - Reports of Parliamentary Committees, Research documents,
  - UN and affiliated/related body Reports
  - Study Reports, Consultancy Reports, Research papers, Journals/newspapers
  - Any other knowledge resources deemed relevant to CAG's mandate.
5. Each Knowledge Entry will be assigned a security level which could be one of two: 'Public' (accessible to everyone in IAAD), and 'Restricted' (Accessible to a

group/office/wing). Access to the different Knowledge Entries would be controlled through the login credentials. As a start, only public content is to be uploaded on the CKR. The Restricted Entries, if any will be added at a later stage of the development of the CKR.

The Access control for Knowledge Entries is indicated in Annexure 2.

### C. Content submission

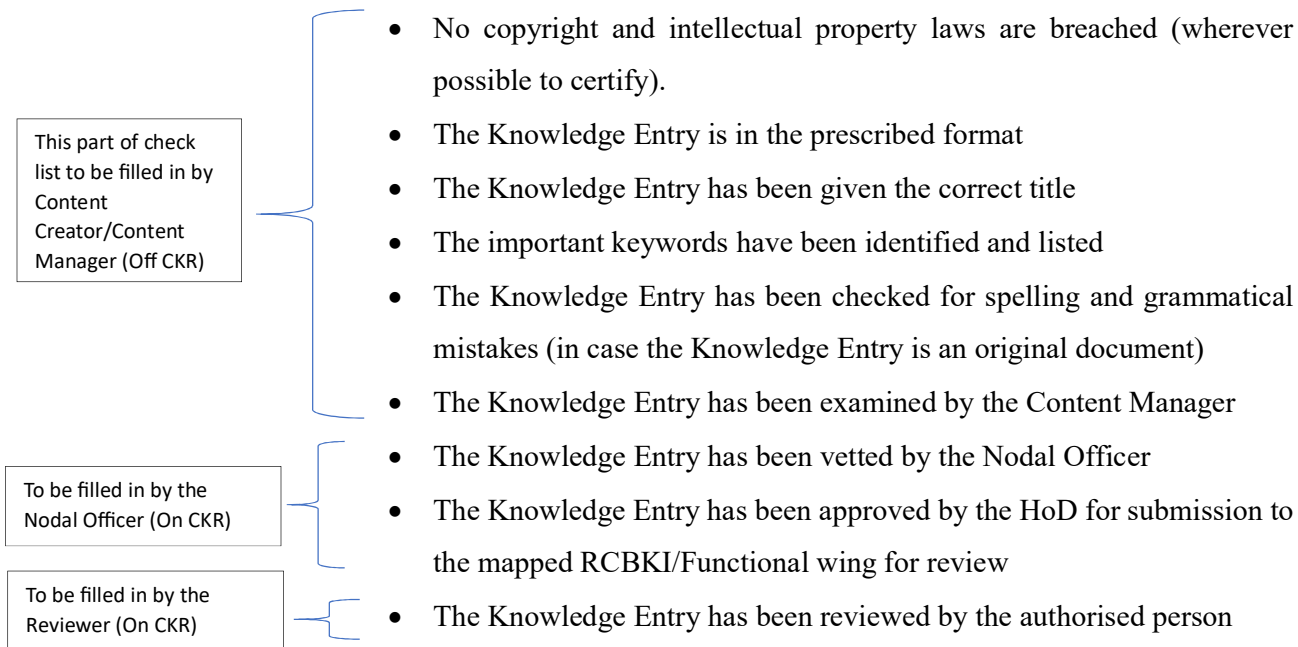
#### Step 1: Role of Content creator (Off CKR):

1. The Author/Content Creator will send his/her material to the appropriate Content Managers.
2. Each submission will consist of the content document, identified category/sub-category, set of keywords, a completed checklist, and a Note or Value Statement on the relevance of the content and why it should be hosted on the CKR. The Value Statement will also indicate the security level of the Knowledge Entry. The submission may contain more than one Category/sub-category in order to ensure *cross-referencing* and enhance the searchability of the document on the CKR.
3. The checklist should give an assurance that the Knowledge Entry is suitable and relevant for being hosted on the CKR. The checklist would indicate that:

- The Knowledge Entry is suitable for the CKR
- The Knowledge Category/Categories has/have been identified
- The Knowledge Entry is not a duplication
- The Knowledge Entry is a newer version of an existing content (content creator to give details if this is checked. He/she will also have to propose whether the new content should replace the existing content or whether the new content can reside along with the existing content. If both the contents are to be maintained, there has to be a hyperlink between both the contents)
- The Knowledge Entry is authentic
- The Knowledge Entry source is authentic (wherever possible to certify)
- The Knowledge Entry is not declared as *Classified or protected* by some law (wherever possible to certify).

This part of check list to be filled in by Content Creator/Content Manager (Off CKR)





### Step 2: Role of Content Manager (Off CKR)

4. The Content Management team will check the Knowledge Entry to ensure its importance and relevance to the identified CKR category/ Categories. The team will check whether keywords are identified as per protocol and verify the correctness of the keywords. The team will confirm that there are no gross spelling or grammatical errors (especially in case the Knowledge Entry submitted is original content), and then complete the checklist by checking the box ‘The Knowledge Entry has been examined by the Content manager’ and give remarks/ recommendations in the ‘Value Statement’ box. The Value Statement is mandatory and indicates that the content management team has gone through the Knowledge Entry and takes responsibility for it. The Value Statement will also give the opinion of the Content Manager about the security level of the Knowledge Entry. In order to ensure *cross-referencing* the content manager may include more Categories/sub-categories if found appropriate. Once the material has been shortlisted, it would be submitted to the Nodal officer.

### Step 3: Role of the Nodal Officer (Off and On CKR)

5. On receipt of the Knowledge Entry from the Content Managers, the Nodal Officer will also scrutinise the material and go through the various checks as per the checklist. He will also check the box ‘The Knowledge Entry has been vetted by the Nodal Officer’

and give his Value Statement. He will then send the Knowledge Entry to the HoD for approval for onward submission to the mapped RCB&KI. Once the Knowledge Entry is approved by the HoD, the Nodal Officer will update the checklist by checking in 'The Knowledge Entry has been approved by the HOD for submission to the mapped RCBKI/Functional Wing for review'. Thereafter the Nodal Officer will import the Knowledge Entry, keywords, category/sub category (ies) and checklist on the CKR and send to the mapped RCBKI which is the Knowledge Centre for that knowledge category for review. In cases where the Knowledge Entry cannot be matched with any RCB&KI, the Nodal Officer will send it to the Functional Wing to which it pertains. There will also be provision to indicate the date when the Knowledge Entry was created and sent to the Content Manager, the date when the Content Manager scrutinized it and sent it to the Nodal Officer, the date when the Nodal Officer sent it to the HoD, the date of approval by the HoD and the date on which the Nodal Officer sent it to the RCBKI/Functional Wing. This would ensure that contents do not get unduly held up at any level.

6. The Nodal Officer will serve as the coordinator between the field offices, and RCBKIs/RCBKCs/Functional Wings in matters related to the CKR.

**Step 4: Role of RCBKIs/ Functional wings (On CKR)**

7. On receipt of the Knowledge Entry from the Nodal Officer from the field office the RCBKI/RCBKCs/Functional Wing will review the Knowledge Entry, checklist and keywords. The process of review shall also include checking for duplication so as to avoid proposal of a Knowledge Entry already existing on the CKR. If the content is found suitable it will be submitted to the KCB wing on the CKR. In case of content not found suitable, it shall be sent back to the Nodal Officer responsible for proposing the Knowledge Entry. The reasons why it is not found suitable would also be communicated to the Nodal Officer. This would ensure transparency and also be a future guide to the nodal officers/content managers and content creators.
8. An automatic reminder will be sent every 15 days till the RCBKI submits the Knowledge Entry to the KCB Wing.

## Steps for Content submission

(All the steps mentioned hereinafter are indicative and will evolve and change during the development of the CKR)

*As an illustration, the document titled “Benchmarks for Evaluating Performance of Blue Economy” by Mr. Tapas Paul has been chosen. This was presented during the SAI20 summit in Goa in June 2023.*

1. Access the CAG website [www.cag.gov.in](http://www.cag.gov.in)
2. Click on ‘Central Knowledge Repository’ on the main taskbar
3. The login page (Screen 1) for the CKR is displayed. The user will be asked for the ID and password. Login with name based official email id and password i.e. the ID and password used for CAG email ID
4. The screen (Screen 2) that opens will show options based on the office in which the employee logged into the CKR is working, as follows:

(i) A Field Office:

- **Viewer** to view the content available on CKR
- **Proposer** to submit the Knowledge Entry to concerned RCBKI or functional wing

(ii) RCBKI/ Functional wing

- **Viewer**
- **Proposer** to submit the Knowledge Entry to concerned RCBKI or Functional Wing
- **Reviewer** to send the Knowledge Entry to KCB Wing for publishing on the CKR

(iii) K&CB wing

- **Viewer**
- **Proposer**
- **Reviewer**

- **Approver/ publisher:** All the Knowledge Entries submitted by the RCBKI/RCBKC's and Functional Wings are available here for publishing on the CKR.

The Access Controls for different actions on the website are detailed in Annexure 2.

5. Click on the Proposer button
6. The screen (Screen 3) that opens will ask for the following information:
  - a. Knowledge Entry details

This will open another screen (Screen 4) where some more details will be required:

- i. Name of the Knowledge Entry

*Illustration: Benchmarks for Evaluating Performance of Blue Economy*

- ii. Type/Subject matter of the Knowledge Entry (e.g. Audit report, Guidelines, Manuals, Rules and regulations, etc.)

*Illustration: Presentation*

- iii. Ministry/Department/Institution

*Illustration: World Bank*

- iv. Author/signatory

*Illustration: Tapas Paul*

- v. Date of creation of the Knowledge entry

*Illustration June 2020*

- vi. Version

*Illustration: Version 1*

vii. Gazette Details

*Illustration: NA*

viii. Suggested Category, Subcategory, Sub Ordinate Category of the CKR for placing the Knowledge Entry

*Illustration: The Knowledge Entry will be placed under the category 'International Footprints ', sub category 'Multilateral Engagement' and subordinate category 'SAI20'. It will be cross referenced with the category 'Sectoral Resources for Audit', sub category 'Environment and Sustainable development'. It will also be cross referenced with the topic of 'Blue Economy'.*

- b. Checklist to accompany the Knowledge Entry: Each Knowledge Entry to be uploaded on the CKR has to be accompanied by a checklist. Click on the attachment icon and attach the checklist.

*Illustration: The checklist for the illustrative document will be as follows:*

	<b>Checklist</b>	
1.	<i>The Knowledge Entry is found suitable for the CKR.</i>	✓
2.	<i>The Knowledge Category (ies) on which it will be hosted on the CKR has been identified</i>	✓
3.	<i>The Knowledge Entry doesn't already exist on the CKR</i>	✓
4.	<i>The Knowledge entry is a newer version of an existing entry (if checked, a popup will open prompting the user to select the existing entry in the CKR)</i>	
5.	<i>The Knowledge Entry is authentic</i>	✓
6.	<i>The Knowledge Entry source is authentic.</i>	
7.	<i>The Knowledge Entry is not declared as Classified or protected by some law.</i>	

8.	<i>No copyright and intellectual property laws are breached.</i>	
9.	<i>The document/video is in the proper format</i>	✓
10.	<i>The Knowledge Entry has been given the correct title</i>	✓
11.	<i>The important keywords have been identified and listed</i>	✓
12.	<i>The Knowledge Entry has been checked for spelling and grammatical mistakes</i>	✓
13.	<i>The Knowledge Entry has been examined by the Content Manager</i>	✓
14.	<i>The Knowledge Entry has been vetted by the Nodal Officer</i>	✓
15.	<i>The Knowledge Entry has been approved by the HoD for submission to the mapped RCBKI/Functional wing for review</i>	✓
16.	<i>The Knowledge Entry has been reviewed by the authorised person</i>	✓

- c. Keywords: Each Knowledge Entry to be submitted on the CKR has to be extensively tagged. For tagging, important keywords in the Knowledge Entry need to be identified. The Nodal Officer submitting the Knowledge Entry will list all the important keywords out here.

*Illustration: The keywords for the illustrative Knowledge Entry may be chosen as follows:*

<i>benchmarks</i>	<i>coastal communities</i>	<i>desalination</i>
<i>performance</i>	<i>ocean ecosystem</i>	<i>seabed mining</i>
<i>blue economy</i>	<i>ocean economy</i>	<i>accounting</i>
<i>marine and coastal ecosystem</i>	<i>renewable energy</i>	<i>world bank</i>

<i>economic growth</i>	<i>aquaculture</i>	<i>blue economy financing</i>
<i>equitable benefits</i>	<i>bioprospecting</i>	<i>blue economic actions</i>

- d. Value Statement/Remarks: The Nodal Officer submitting the Knowledge Entry will have to give his/her remarks on the Knowledge Entry being submitted indicating why he/she feels it should form a part of the CKR, and indicating the security level of the Knowledge Entry.

*Illustration: Security level: Public*

7. Click on the ‘Send to RCBKI/Functional Wing’ button. The system will display the list of RCBKIs and Functional Wings. Click on the institute/wing to which the Knowledge Entry is to be sent for review.

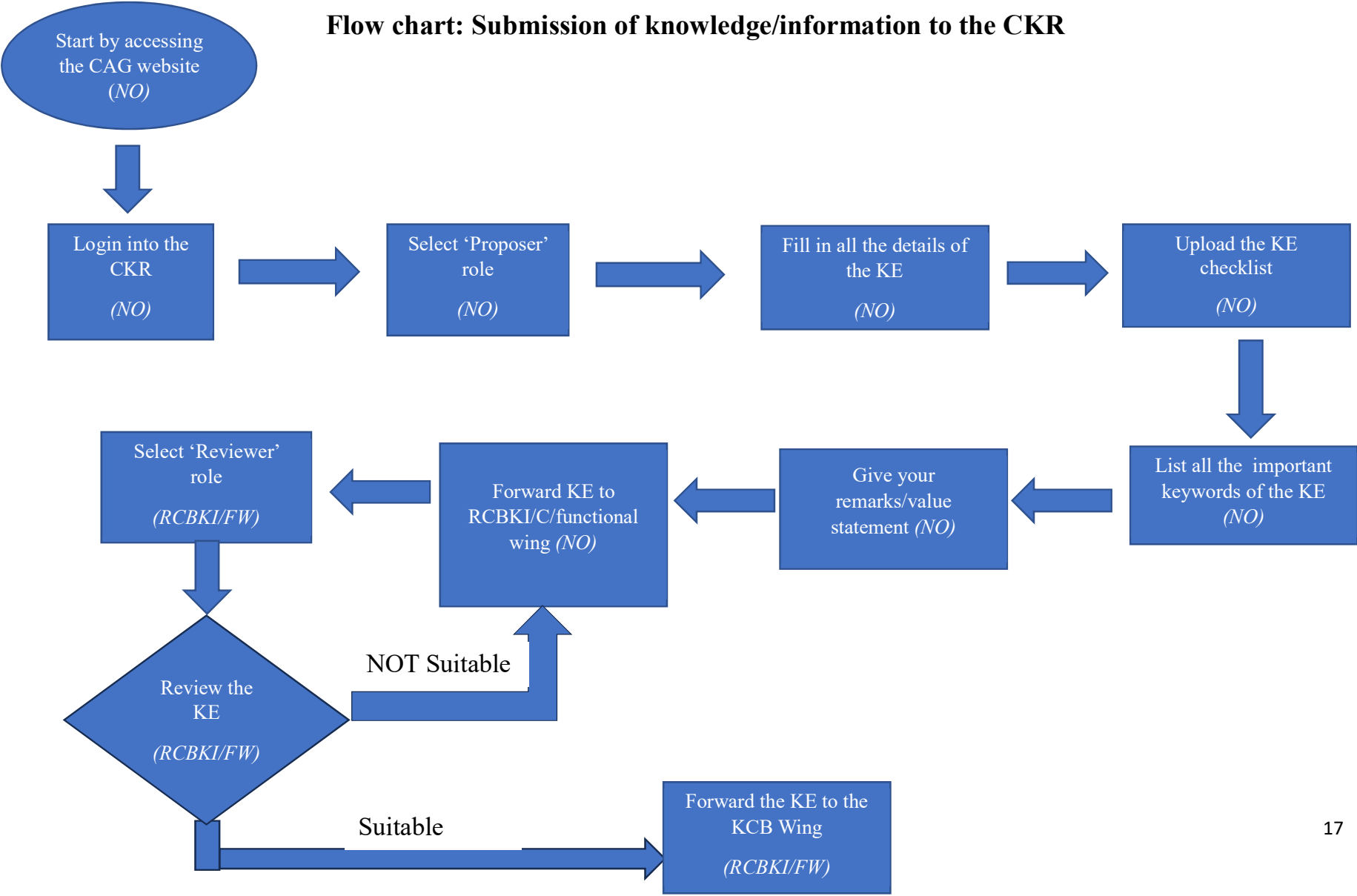
*Illustration: The Knowledge Entry will be sent to iCED for review*

8. An automatic email will be sent to the RCBKI/Functional wing informing them that a Knowledge Entry has been submitted for their review.
9. The RCBKI/Functional Wing will follow steps 1 to 4 to access Screen 2
10. Click on the Reviewer button
11. All the Knowledge Entries received by that particular RCBKI/Functional Wing would be listed/enumerated.
12. Click on one of the Knowledge Entries and go through it to check the content for suitability for the CKR and relevance to the Knowledge category/sub category/subordinate category.
13. Examine the checklist for its completeness and verify all the items.
14. Check for duplication so as to avoid proposal of a Knowledge Entry which has already been proposed by this RCBKI/Functional wing and is already existing on the CKR. This can be done by searching the Knowledge Entry in the log of Knowledge Entries sent to the KCB Wing in the past or by carrying out a search using keywords of the Knowledge Entry in ‘Viewer’ mode on CKR.
15. Check whether sufficient keywords have been identified for the Knowledge Entry and are identified as per protocol.

16. Write the Value Statement in the box provided for this purpose indicating that the Knowledge Entry has been reviewed and it fulfils all the criteria required for being uploaded on the CKR. Give your opinion on the security level of the Knowledge Entry.
17. In case some deficiency is noticed or some modification is required click the 'Return' button to return the Knowledge Entry to the Nodal Officer.
18. If the content is found to be complete and satisfactory in all sense, insert a check mark in the checklist against 'The Knowledge Entry has been reviewed by the authorised person'.
19. Click the 'Submit' button to send the Knowledge Entry to the K&CB wing.
20. If the content is not found suitable for the CKR, it shall be sent back to the Nodal Officer responsible for proposing the Knowledge Entry
21. An automatic email will be sent to the K&CB wing informing them that a Knowledge Entry has been submitted for their approval and publishing on the CKR.



**Flow chart: Submission of knowledge/information to the CKR**



#### **D. Content approval and publishing**

Once the K&CB Wing receives notification regarding submission of some new content on the CKR, the Wing will perform the assigned checks and then upload the content on the CKR for dissemination, as under:

##### **Steps for content approval and upload to the CKR**

1. Access the CAG website [www.cag.gov.in](http://www.cag.gov.in)
2. Click on 'Central Knowledge Repository' on the main taskbar
3. The login page (Screen 1) for the CKR is displayed. The user will be asked for the ID and password. Login with name based official email id and password i.e. the ID and password used for CAG email ID.
4. The screen (Screen 2) that will open will show four options asking the user to select the role for logging in, as follows:
  - i. **Viewer**
  - ii. **Proposer**
  - iii. **Reviewer**
  - iv. **Approver**
5. Click on the Approver button
6. The list of Knowledge Entries that have been submitted for publishing on the CKR will be shown
7. Click on any of the pending Knowledge Entries which will open a new screen with the details of the Knowledge Entry so as to enable the K&CB Wing to carry out some basic checks such as:
  - a. The Knowledge Entry is complete
  - b. The Knowledge Entry is categorised correctly
  - c. The pages are in order
  - d. There are no obvious spelling mistakes
  - e. The Knowledge Entry is formatted adequately
  - f. The Knowledge Entry is relevant
  - g. The Knowledge Entry is not a duplication of a pre-existing Knowledge Entry

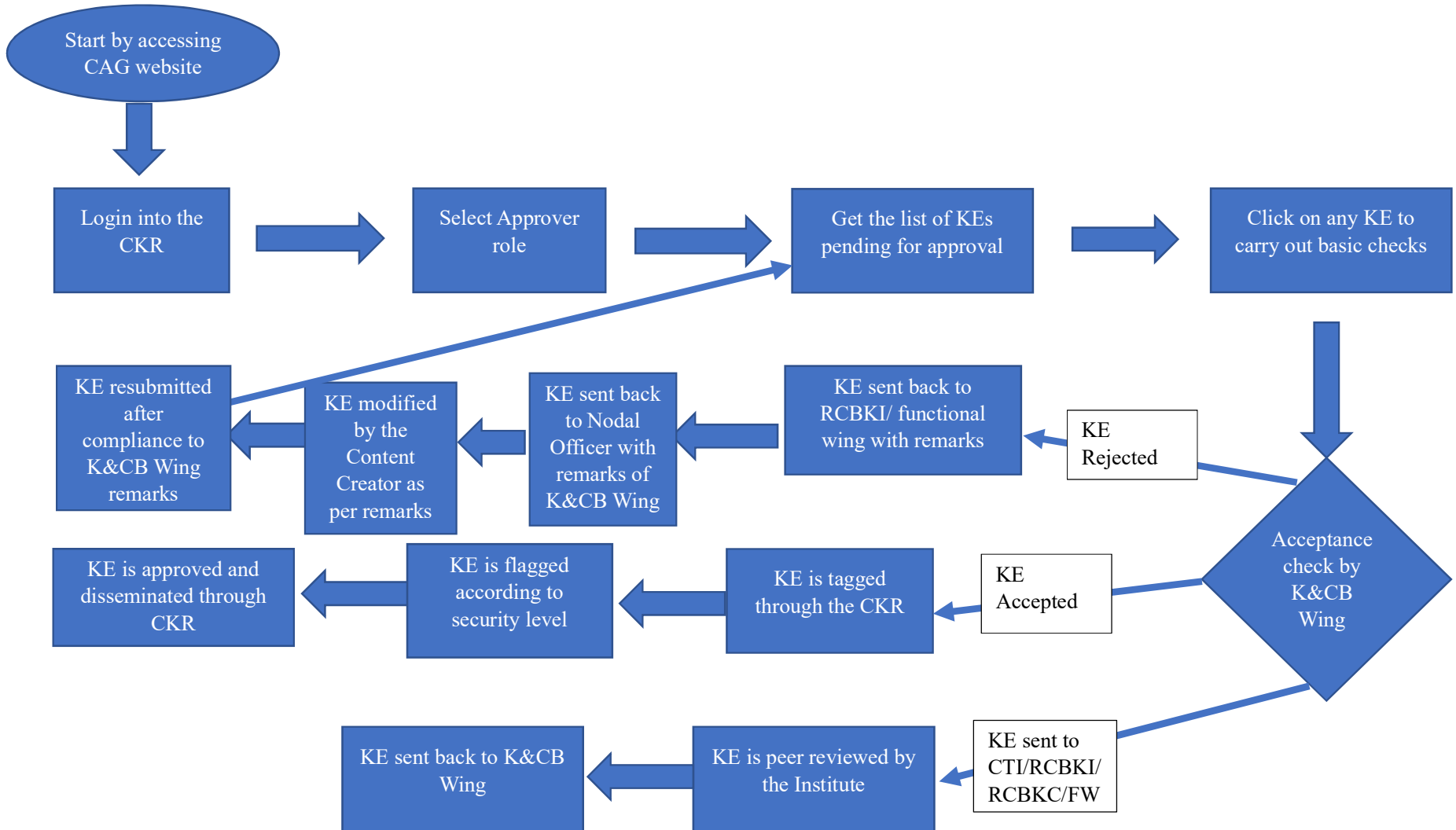
8. Click on the attached checklist and ensure that the checklist is complete and all the items have been taken care of by the Nodal Officer and the RCBKI/Functional Wing.
9. The K&CB Wing at this stage can make changes to the suggested category/categories of the Knowledge Entry if it is perceived that the category/categories of the Knowledge Entry has been selected incorrectly.
10. Once all checks have been completed, tag the Knowledge Entry with the identified keywords (tagging page available with the K&CB wing role as a separate menu item. Tagging details given in Annexure 4).
11. Check the Value Statements and the indicated security level. Flag the Knowledge Entry accordingly.
12. Approve the Knowledge Entry by clicking on the Approve button, and the Knowledge Entry will be published on the CKR and be made available for view to all users/selected users of the CKR.
13. In case the K&CB Wing is not satisfied after the basic checks, it can reject the Knowledge Entry with remarks by clicking on the Reject button. The remarks are forwarded automatically to the RCBKI/Functional Wing who had forwarded the entry. The Knowledge Entry can be resubmitted after making the requisite corrections.
14. In case the K&CB Wing feels that some more work is required to be done on the Knowledge Entry, or that a fresh perspective is required, the Knowledge Entry can also be sent to CTIs or any other RCBKI/RCBKC besides the RCBKI which had forwarded the entry, by clicking on the 'Send to Knowledge Institute' button.
15. An automatic reminder will be sent to the K&CB Wing every 15 days after the submission of a Knowledge Entry for its approval.

**Sign-off levels are prescribed as under:**

- (i) If the proposed Knowledge Entry is already an authentic/published document such as government circulars/schemes or a work product like an Audit Report, K&CB wing will approve and sign-off – **Sign-off by DG (CB)**
- (ii) If the Knowledge Entry is original material like case study/research paper/STM etc:
  - K&CB wing will get the Knowledge Entry peer-reviewed/vetted by CTIs/RCBKIs/RCBKCs/Functional Wings, as appropriate.

- Peer-review suggestions / comments if any will be communicated to the concerned RCBKI/Functional Wing for examination and modification of the Knowledge Entry accordingly.
- The updated Knowledge Entry will reach K&CB wing through the prescribed 'Submission Process'
- A **committee** comprising ADAI (CB) & CKO, DG (CB) and the Head of the Functional Wing dealing with the subject matter will approve the content – **Sign-off by DG (CB)**

### Flow chart: Content Approval and Upload (KCB wing)



## **E. Access and permissions**

Access levels and permissions need to be defined for users based on their roles and responsibilities related to the CKR. The various aspects of Access have been detailed below:

1. **Role based Access Controls:** This specifies different access levels based on user roles and responsibilities, outlining what each level allows users to view, contribute, approve and modify within the repository.
  - a. View: The CKR will be accessible to all persons within the IA&AD through the official CAG email ID and password.
  - b. Propose: Though content and knowledge creation will be open to everyone, only Nodal officers will be allowed to propose the content on the CKR and forward to RCBKI/C.
  - c. Review: RCBKIs/C and Functional Wings will be allowed to review content on the CKR.
  - d. Approve: Only the K&CB Wing will have the access to approve and publish a submitted Knowledge Entry.
2. **Authentication and Authorization:** There will be integration with eHRMS through which the user's designation, office, wing will be automatically fetched by the CKR. Till the time eHRMS is rolled out in all field offices, there may be integration with SAI Training portal for the same purpose as the designation, office and wing are all captured on real time in SAI Training portal as well. Once the login credentials are entered the system will identify whether the user is authorised to access the CKR and the level of access he/she is entitled to. The 'Role Manager' module of the CKR for nomination of the Nodal Officers and the Reviewers will also be integrated with the eHRMS.
3. **Data Security and Privacy:** As the CKR would be a crucial intellectual asset of the IAAD, securing it from various cyber security threats is of utmost importance, and security measures need to be put in place to protect knowledge assets from unauthorized access or data breaches.

The various risks are:

- Risk of Data loss
- Risk of unauthorized access

- Risk of intrusion by unauthorized and unwanted content upload.
- Risk of blocked access.

Security measures that can be built into the system:

- Secured transit and storage of data: When knowledge is being shared, data needs protection, especially during transit and the System needs to have this capability to protect data. This can be achieved by End to End encryption. Encryption makes it harder for hackers to intercept and steal stored data, especially if they do not have the key to decrypt it.
- Constant monitoring: The System should have the capability of continuous monitoring of the entire system and access logs should be made available to the IT security team.
- Secured access: The infrastructure supporting the CKR has to necessarily have secured access controls, preferably Single Sign-On (SSO). SSO is about having one set of login credentials which improves enterprise security.
- Storage: Secured storage of the data is required.
- Data back up: Regular backups will be implemented to safeguard the CKR's data.
- Enhanced awareness: All the stakeholders must possess enhanced awareness of various types of cyber-attacks and measures required to avoid them. Regular training and awareness drives are required.
- Computer Emergency Response Team (CERT): A CERT should be constituted for CKR comprising a group of experts who identify and respond to cybersecurity incidents.

#### **F. Dissemination through CKR/Search and retrieval**

**Steps for accessing information from the CKR:**

##### **a. Using the CKR categories**

1. Access the CAG website [www.cag.gov.in](http://www.cag.gov.in)
2. Click on 'Central Knowledge Repository' on the main taskbar

3. The login page (Screen 1) for the CKR is displayed. The user will be asked for the ID and password. Login with name based official email id and password i.e the ID and password used for CAG email ID.
4. The screen (Screen 2) that opens will show options based on the office in which the employee logged into the CKR is working as indicated under 'Steps for Content submission' :
5. Click on the 'Viewer' button
6. Go through the main categories listed on the page and click on the relevant one
7. If there are no sub categories, scroll through the Knowledge Entries listed under the chosen category and click on the one required.
8. If there are further sub categories, click on the relevant ones till you reach the list of Knowledge Entries. Click on the one required.

**b. Using the search bar**

1. Steps 1 to 5 are the same as above
2. A search bar will come up. Enter the keywords/Knowledge Entry name into the search bar and press 'Enter'.
3. Various options will be shown. Choose the one you want.

**c. Using the chatbot**

1. Steps 1 to 5 are the same as above
2. A chatbot will ask you if you need any help
3. Type out your requirements in the dialogue box
4. The chatbot will give various options
5. Choose the one required.
6. The chat bot will have AI features embedded into it in order to provide Semantic search facility.

**d. Clicking on the 'Most viewed' scrolling bar**

1. Steps 1 to 5 are the same as above
2. There will be a scrolling bar showing the most viewed items
3. Click on the item required.

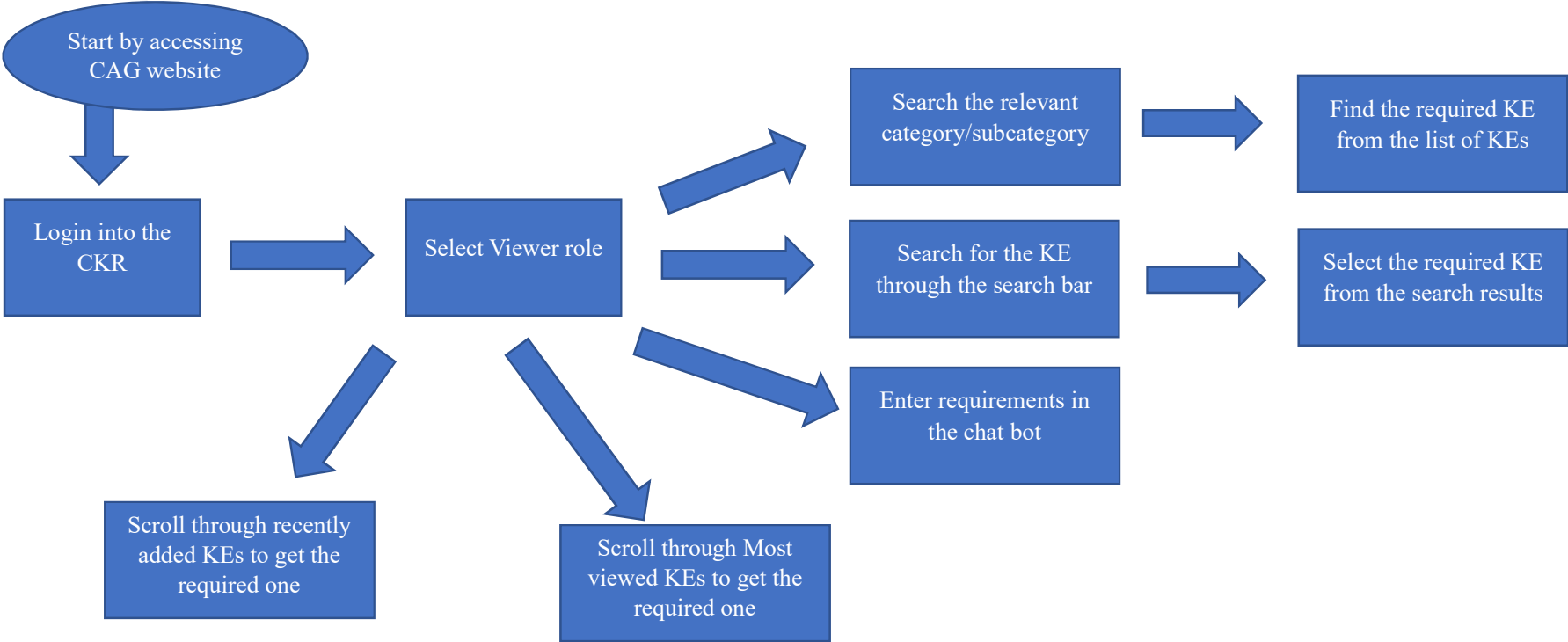


e. **Clicking on the 'Recently added' scrolling bar** (Added in the last six months prior to system/searching date)

1. Steps 1 to 5 are the same as above
2. There will be a scrolling bar showing the recently added items.
3. Click on the item required

The Knowledge Entry will open in the CKR portal itself. To access offline download the document.

**Flow chart: Dissemination through CKR/Search and retrieval**



## **G. Feedback and Periodic Review**

1. Feedback and periodic review helps the organisation in understanding the strengths and weaknesses of the system/mechanism in place. Therefore,
  - (i) It is essential to provide a feedback option to users at all levels.
  - (ii) The feedback received from the users is to be reviewed.
  - (iii) Appropriate and timely action is to be taken wherever required.
2. Feedback option will be available for users at two stages i.e. (i) Knowledge Submission  
(ii) Knowledge Access.

### **Steps for providing feedback:**

- (i) **Feedback after submission of Knowledge Entry:** After successful submission of the Knowledge Entry on the CKR portal, the users at the levels of Proposer, Reviewer and Approver will be asked if they wish to provide feedback on the process. If they click on the 'No' button, they will exit the CKR. If they click on the 'Yes' button, a dialogue box will open where they can provide their feedback:
- (ii) **Feedback after accessing the knowledge:** After successfully accessing the requisite knowledge on the CKR portal, the users will be asked if they wish to provide feedback on the process. If they click on the 'No' button, they will exit the CKR. If they click on the 'Yes' button a screen will open where users can provide the following feedback:
  - Did the knowledge accessed serve the purpose? – Yes/No. If no, please mention the reason in 'Remarks and Other suggestions'
  - Whether the knowledge accessed is available under appropriate categorisation? – Yes/No. If no, please mention the reason in 'Remarks and Other suggestions'
  - Is the Knowledge Entry tagged appropriately? – Yes/No. If no, please mention the reason in 'Remarks and Other suggestions'
  - Whether the knowledge accessing process is user-friendly – Yes/No. If no, please mention the reason in 'Remarks and Other suggestions'.
  - Accuracy of the search results on a scale of 1 to 5 – 1 being most inappropriate and 5 being most appropriate.
  - Remarks and Other suggestions
3. Whenever feedback is provided by users a notification will be sent to the K&CB wing and a bell icon will appear on the screen for K&CB Wing indicating pending

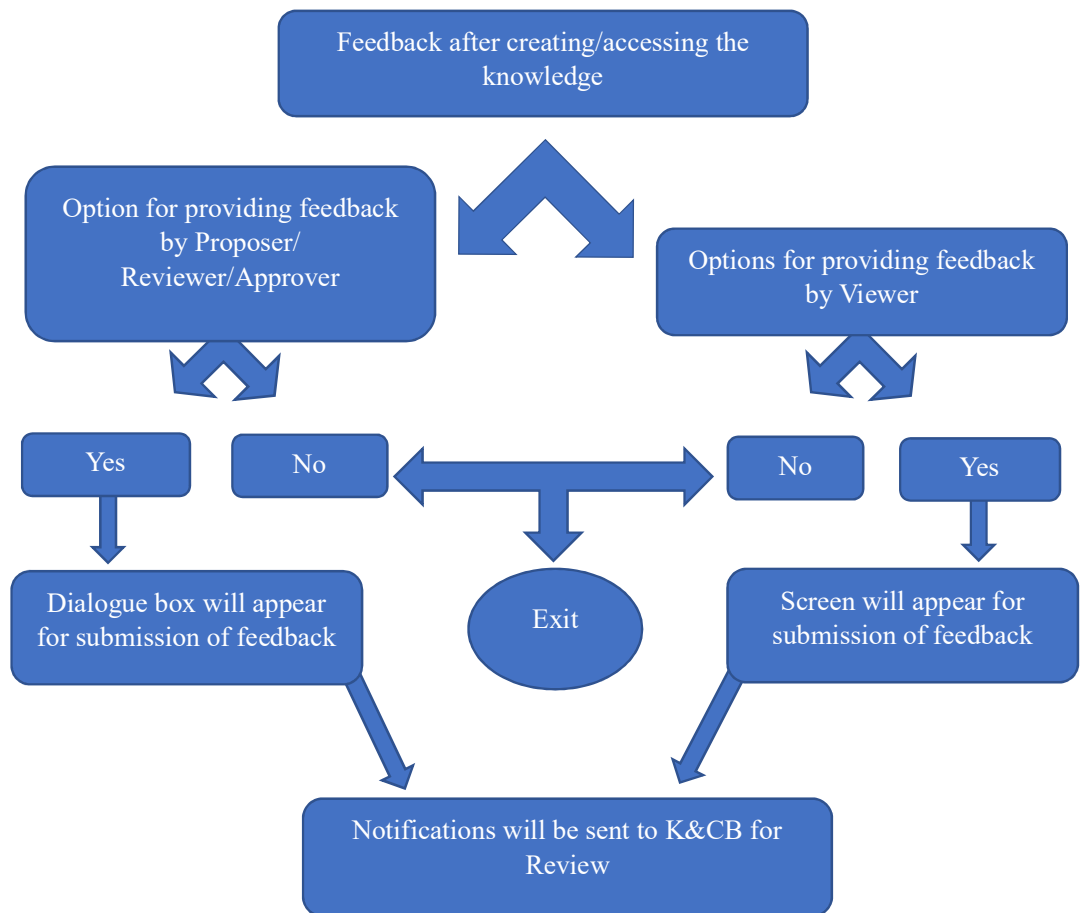
notifications. The feedback provided by the users will be reviewed by the K&CB wing for making appropriate changes, wherever required. This can be done as under:

- Examination of the feedback received by K&CB wing.
  - Categorisation of feedback suggestions into 'doable' & 'non-doable'.
  - Modifications to the CKR portal for doable suggestions.
  - Action taken on doable and non-doable suggestions will be communicated to the users.
4. Periodic Review: All content uploaded on the CKR is to be reviewed by the Nodal Officers after a fixed period. In case the content is superseded by a newer version, the depreciated version is to be archived. Archiving will simply keep the old version in a separate location while linking it to the newer version in case anyone wishes to view the previous version. Modifications coming out of periodic review will follow the same process of content submission by the content manager team.
5. Archiving: In case an existing document in the CKR is superseded by a newer version, the same has to be marked in the CKR as well. The following are the steps for archiving old content on the CKR.
- The content is submitted to the Content Manager as any other content, with the clear indication that it is supposed to supersede existing content on the CKR.
  - The Content Manager forwards the content to the nodal officer after taking approval on file from the HoD.
  - The Nodal Officer, while submitting the content on the CKR for forwarding to the RCBKI/C checks the checkbox 'the Knowledge Entry is a newer version of an existing content' on the checklist. Upon checking the checkbox, a popup will open containing the list of all Knowledge Entries on the CKR. The user is to search for and select the appropriate Knowledge Entry.
  - Remaining process is the same as that of any other content approval.
  - Upon approval by K&CB wing, the previous version will be archived, i.e., it will be moved to a different database, and the entry will be replaced by the new file. Further, the link to all previous versions will automatically be

created with the current entry and the same can be visible upon content searching.

6. A dashboard should be created for use by the K&CB Wing and DAI(HR) which gives details of (a) all cases where timely action has not been taken by the reviewer/approver and publisher (b) Office-wise/functional-wing-wise details of contents created (c) all contents that haven't been viewed/rarely viewed for more than one year/three years. This will help K&CB Wing to perform a periodical exercise to review contents that are rarely used and to decide on their retention in the CKR.

### Flow chart: Feedback & Review mechanism



## Annexure 1

Mapping of Audit sub categories with the Knowledge Centre topics of the CTIs/RCBKIs/RCBKC's

- i. Finance (RCBKI/C Prayagraj, Delhi & Bangalore)
- ii. Science and Technology (iCISA Noida)
- iii. Environment and Sustainable development (iCED Jaipur)
- iv. Industry and Commerce (RCBKI Mumbai)
- v. Agriculture and Rural Development (iCED Jaipur)
- vi. Social welfare (RCBKI Ranchi)
- vii. Defence and National Security (RCBKI Jammu)
- viii. Information Technology and communication (iCISA Noida)
- ix. Power and Energy (RCBKI Mumbai)
- x. Transport and infrastructure (RCBKI Ranchi)
- xi. Taxes and Duties (RCBKI Nagpur)
- xii. Local Governance (RCBKI Kolkata)
- xiii. General sector ministries and Constitutional bodies (RCBKC Bengaluru)
- xiv. Education, health and Family Welfare (RCBKI Ranchi)
- xv. Social infrastructure (RCBKI Ranchi)
- xvi. Fraud and Forensic audit (RCBKI Hyderabad)
- xvii. Railways

## Annexure 2

### Access Controls for different actions on the website

	<b>View</b>	<b>Propose</b>	<b>Review</b>	<b>Approve</b>
All employees of IAAD	✓			
Nodal Officer	✓	✓		
RCBKIs/Cs/FW	✓	✓	✓	
K&CB Wing	✓	✓	✓	✓

Officers who may have the different roles:

Nodal Officer:

- GO and above in field offices
- Sr. AO/AAO in Functional Wings/ RCBKIs/Cs in the absence of GO
- Nomination of Nodal officer is done by the HoD of the Field Offices/ RCBKIs/Cs/Functional Wings

Reviewer:

- Core faculty (General/IT) of RCBKIs/Cs, the seniormost officer in the Functional Wings, Sr. AO/AAO of K&CB wing

Approver

- Sr. AO/AAO of K&CB wing

## **Annexure 3**

### **Checklist**

The checklist needs to ensure the accuracy and quality of the content being submitted. The various aspects taken into account while preparing the checklist are as under:

#### **Content Accuracy:**

- Verify all facts, figures, and statistics for accuracy and reliability.
- Cross-check information from multiple credible sources to ensure consistency.
- Confirm that there are no outdated or obsolete references or information.

#### **Content Relevance:**

- Ensure that the content directly addresses the defined purpose and objectives.
- Confirm that the content aligns with CAG's mission, goals, and guidelines.
- Consider the needs and interests of the target audience throughout the content creation process.

#### **Quality Assurance:**

- Validate that the content adheres to CAG's quality standards and guidelines.
- Review any recommendations or conclusions for soundness and relevance.

#### **Accessibility and Compliance:**

- Address privacy and security considerations, particularly when handling sensitive or confidential information.
- Ensure that the content is consistent with copyright and intellectual property laws.

#### **Version Control:**

- Keep track of different drafts and versions, and clearly label the Knowledge Entry with version numbers and dates. Track of the different versions of content is to be kept track of by the CKR.



- Verify that the most recent version is being submitted. Track of the different versions of content is to be kept track of by the CKR.

**Documentation:**

- Maintain records of the content creation process, including drafts, reviews, and approvals.
- Document the creation date, authorship, and relevant information about the content.

## Annexure 4

### **Structure for the CKR Tagging**

Each Knowledge Entry would need to have the following attributes which are to be saved at the time of the upload.

- a. **Subject matter of knowledge:** Keyword(s) that represents the subject matter of the Knowledge Entry.
- b. **Ministry/Department/Institution:** The Ministry/department/Institution that issued the Knowledge Entry.
- c. **Author(s)/Signatory:** Name of authors (in case of research paper, discussion paper etc) or signatory who has signed the Knowledge Entry.
- d. **Date of issue:** Particular date in DD/MM/YYYY format on which the Knowledge Entry is issued by the issuer Ministry/Department/Institution.
- e. **Version/edition:** Which version/edition the Knowledge Entry corresponds to.
- f. **Gazette details:** Details of Ordinary/extra ordinary.

These parameters will also behave as additional keywords which can be used to search for a Knowledge Entry. For instance, if a Knowledge Entry is authored by “ABC”, then searching for ABC in the search box will display all Knowledge Entries authored by “ABC”. These will be followed by Knowledge Entries which had the keyword “ABC” tagged to them.

Tagging with respect to keywords to be done for each Knowledge Entry before uploading on the CKR is as follows:

•There are to be 4 levels of keywords:

1. Knowledge Entry name: Keywords for the first level may be selected from the Knowledge Entry titles while ignoring generic words in the title. This is to be the highest level/importance key word and the search results will accord the highest priority to this.
2. Chapter name [wherever applicable]: Keywords for the second level may be selected from the chapter names of each chapter of the Knowledge Entries while ignoring generic words.
3. Chapter sub-headings [wherever applicable]: Keywords for the third level may

be selected from the subheadings of the chapter/ Knowledge Entry while ignoring generic words.

4. In-line keywords: Keywords from inside the Knowledge Entry/chapter

The level of keywords will be used to optimize the search functionality of the CKR. For instance, if the phrase “Blue economy” is a level 1 keyword in Knowledge Entry A while it is a level 3 keyword in Knowledge Entry B, if the phrase is searched, Knowledge Entry A will appear before B in the search results. For the illustrative Knowledge Entry, the following will be the final list of tagged keywords along with their levels:

<b>Keyword</b>	<b>Keyword Level</b>	<b>Page no</b>
benchmarks	1	1
performance	1	1
blue economy	1	1
marine and coastal ecosystem	4	2
economic growth	4	2
equitable benefits	4	2
coastal communities	4	2
ocean ecosystem	4	3
ocean economy	4	3
renewable energy	4	3
Aquaculture	4	3
Bioprospecting	4	3
Desalination	4	3
seabed mining	4	6
Accounting	4	7
world bank	2	10
blue economy financing	2	10
blue economic actions	2	12

**Duplication detection**

Tagging will also enable the system to check the following before uploading a specific Knowledge Entry:

1. Knowledge Entry name: If a Knowledge Entry with the same name is present in the CKR, the user is prompted to recheck the Knowledge Entry being uploaded. A link to the existing Knowledge Entry will be provided so the user can recheck if the Knowledge Entry being uploaded is indeed a duplicate of the

already uploaded Knowledge Entry

2. Keyword combination: System checks if the exact combination of keywords (keyword, level, page no) exist for a pre-existing Knowledge Entry

### **Duplication Removal**

1. Each user who submits a Knowledge Entry will have the right to mark existing Knowledge Entries as duplicate. The system will prompt the user to select the original Knowledge Entry of which the marked one is a duplicate.
2. Duplicates marked will be queued with the K&CB wing for redressal. If the marked Knowledge Entry is indeed a duplicate, it will be removed and all meta data of the Knowledge Entry will be replaced with the original one