

Commission for the Conservation of
Southern Bluefin Tuna



みなまぐる保存委員会

CCSBT-CC/0710/Info01

Administrative Comments and Sample Costs of CDS Proposals

Prepared by the Secretariat

Executive summary of Costs of CDS Proposals

(Costs in \$AUS)

Note: There are major disclaimers to this summary and the paper which need to be considered before using any figures for budgetary purposes.

In particular:

- The Secretariat does not have the required detail on proposals to seek quotes for software.
- No allowance has been made for purchase and management of tags.
- Significantly more processes could be added to a final scheme which would add costs.
- Actual costs could be a magnitude of two times these estimates in either direction.

Also note that:

The estimates for training and overheads are not dealt with in the paper as these estimates were calculated at a later stage.

This summary should be regarded as a ballpark estimate for guidance only

| Australian proposal | | | | | |
|---------------------|----------------------|-----------|--------|--|-----------|
| Setup | Software | \$300,000 | | | |
| | Hardware | \$35,000 | | | |
| | Training | \$100,000 | Setup | | \$435,000 |
| Annual | Data entry | \$45,000 | | | |
| | Reconciliation | \$45,000 | | | |
| | Training | \$50,000 | | | |
| | Hardware maintenance | \$20,000 | | | |
| | Overheads | \$70,000 | Annual | | \$230,000 |

| Japanese proposal | | | | | |
|-------------------|----------------------|----------|--------|--|----------|
| Setup | Software | \$30,000 | | | |
| | Hardware | \$0 | | | |
| | Training | \$20,000 | Setup | | \$50,000 |
| Annual | Data entry | \$5,000 | | | |
| | Reconciliation | \$5,000 | | | |
| | Training | \$5,000 | | | |
| | Hardware maintenance | \$0 | | | |
| | Overheads | \$7,500 | Annual | | \$22,500 |

Administrative Comments and Sample Costs of CDS Proposals

The draft workplan for the Compliance Committee Working Group contained an item where the Secretariat may provide comments on the administration and sample costs of CDS proposals provided by Members.

CDS proposals have been provided by both Australia and Japan. There are major differences between the two proposals and consequently it is possible that there will be significant revisions before either proposal is adopted. Therefore, we have not attempted to provide accurate cost estimations (such as would be required for budgetary purposes). Instead, we only have provided highly approximate estimates that can be used to indicate the magnitude of costs likely to be associated with each proposal. These estimates could easily be out by a magnitude of 2 in either direction. Our decision to only provide highly approximate estimates was also dictated by the fact that we do not yet have sufficient information about the proposals to provide accurate cost estimates for either proposal.

Finally, the costs provided here do not include costs for tags (we have not progressed this aspect since our paper CCSBT-CC/0704/04) and the costs we provide are only for the costs to be incurred by the Secretariat.

Australian Proposal

- a) Setup costs
 - i) Software development - \$300,000
 - ii) Hardware - \$35,000 (only \$5,000 if CDS is externally hosted)
 - iii) Training & education – not estimated
- b) Annual costs
 - i) Data Entry - \$45,000 (less if there is electronic lodgement of individual fish details)
 - ii) Follow-up, corrections, reconciliation, reporting - \$45,000
 - iii) hardware replacement (depreciation), software maintenance, line leasing (or host charges), backup, - \$20,000 (only \$10,000 if CDS is externally hosted)
 - iv) Ongoing training – not estimated
- c) Administrative comments
 - i) See text...

a) Setup Costs

The proposal calls for the CDS system to operate in both paper based and electronic modes. This will require development of a database, a web based data entry interface and a bulk downloading interface for measurements of individual fish. The Secretariat can do the database design and some of the database development. All other development will need to be conducted externally.

We are guessing that this work will cost around \$200,000 for an English only version. We further guess that a dual language (English/Japanese) version might cost up to 50% more, but this is highly uncertain. We have not sought quotes on software development from any development firms because we do not have enough detail for a reliable quote to be provided.

If the CDS system is to be housed inside the Secretariat, approximately \$30,000 will be required to purchase and install two web servers (one for backup), system software, firewall and modem. These costs would not be incurred for an externally hosted system. Regardless of hosting location, up to \$5,000 would be required for PCs and PC software.

We have not attempted to estimate training costs. However, we would suggest that full training sessions and documentation be provided to representatives from each Member and Cooperating Non-Member.

b) Annual Costs

The annual costs are primarily labour costs associated with data entry and subsequent follow-up, corrections, reconciliation and reporting. We estimate data entry costs to be approximately \$45,000 per year. **Attachment A** provides the details of how this figure was calculated. These costs assume no electronic lodgement of data. However, from Attachment A, it can be seen that significant reductions in data entry costs would be obtained if substantial quantities of the individual fish measurement data were lodged electronically.

Our experience with the TIS has demonstrated to us that the process of following-up for missing data, obtaining corrections for errors, conduction reconciliations between exports and imports, and providing TIS reports takes as much time as the initial data entry process. Therefore, we have estimated this component of the work to be the same as for data entry (i.e. \$45,000).

In addition to Secretariat labour costs; there are costs for depreciation of hardware (\$12,000 for an internally hosted CDS, \$2,000 for an externally hosted CDS), maintenance and enhancement of the CDS software (~\$5,000 – possibly much higher than this in the first few years) and line leasing or hosting charges (\$3,000).

c) Administrative Comments

We have limited our comments to administrative comments in accordance with the draft workplan for the CCWG.

- When the CDS documents are designed, it will be important to ensure that each document contains a reference to the unique document number of the originating document (e.g. a Transfer document must contain the document number of the Catch documents or preceding Transfer documents from which the SBT came). This feature does not exist on the TIS re-export document (i.e. no reference to the preceding export document) and the lack of this feature currently causes significant problems when conducting reconciliations.
- The proposal allows, under certain circumstances, Members and Cooperating Non-Members to modify the standard form. This feature also exists in the existing TIS system. However, it should be noted that this is not consistent with the principle of harmonisation, it can result in confusion, and in some cases it requires software to be modified to account for the different forms used by different flags. It would be better to design a form that was suitable for all Members than to design a standard form which was then modified by each Member.

- Paragraph 33 of the proposal specifies requirements for importation of SBT from a State/Fishing Entity that is not a Member or Cooperating Non-Member. However, the current authorised vessel list resolution of the Commission does not permit SBT from a non-authorised vessel to be imported by a CCSBT Member. Furthermore, there is no mechanism to allow a non cooperating non-Member's vessel to be placed on the authorised vessel list. Therefore, there is a conflict between this paragraph and the CCSBT authorised vessel resolution that will need to be addressed.

Estimated Data Entry Costs for the Australian CDS proposal

| Document Type | Secretariat data entry time per document (as a % of a TIS document) | Estimated number of documents | | | | | Estimated total cost (\$AUD) to data enter |
|--|---|-------------------------------|-----|------|------|-----|--|
| | | AU | NZ | JP | TW | KR | |
| Catch Document (excluding individual fish measurements) | 50% | 60 | 209 | 4110 | 1080 | 210 | \$6,321 |
| Individual fish measurements associated with catch documents (445,000 individual fish, each with an 8 digit tag number, a 2-3 digit length and a 2-3 digit weight) | - | - | - | - | - | - | \$35,228 |
| Purse Seine Catch Information Document | 100% | 5 | 0 | 0 | 0 | 0 | \$11 |
| Farm Movement Document | 100% | 6 | 0 | 0 | 0 | 0 | \$13 |
| Transfer Document | 50% | 1242 | 151 | 177 | 59 | 8 | \$1,825 |
| Inspection Document | 33% | 1242 | 151 | 177 | 59 | 8 | \$1,205 |

\$44,603

Estimates of data entry time

We have an accurate estimate of the average time and cost to data enter and file each TIS form (15 forms per hour, or \$2.23 per form). Hence, we decided to estimate the time to enter and file each type of document in the CDS proposal as a percentage of the time required to enter and file a TIS form. However, this in turn required us to guess the type and quantity of information required on each CDS form, which creates considerable room for error in the final estimate.

Estimated number of documents

Australia provided estimates of the number of each type of document it would produce. We were also able to obtain a fairly accurate estimate of the number of catch documents that would be produced by New Zealand by using (with New Zealand's prior permission), the shot by shot catch and effort data that New Zealand provides to the Secretariat. The methods used to estimate the number of documents for the other fisheries and document types are:

- The number of "Catch" documents for Japan, Taiwan and Korea was based on the number of vessels reported for 2006 in the 2007 Data Exchange (Japan and Taiwan) or for 2005 as reported to CCSBT 13 (Korea), multiplied by 30¹.
- The number of "Transfer" and "Inspection" documents for New Zealand, Taiwan and Korea was estimated as the number of TIS forms issued in 2006 for each of New Zealand, Taiwan and Korea. The number of "Transfer" and "Inspection" documents for Japan was then estimated as that for Taiwan multiplied by 3 to account for Japan's larger quota.

Estimated cost to enter individual fish

We conducted a simple trial of the average time taken to enter a data set comprising an 8 digit tag number, a 2-3 digit length and a 2-3 digit weight. To calculate the total cost to enter the individual fish data, we then used: the result (8.53 seconds per row) * 445,000 fish * the cost per hour for data entry.

¹ 30 is an extremely uncertain estimate of the average number of catch documents to be provided per vessel per year (36.5 is the absolute maximum number of documents that a vessel would need to provide in a year).

Japanese Proposal

This proposal can be interpreted in two different ways:

- (1) Catch documents are required for all SBT caught regardless of whether they are exported; or
- (2) Catch documents only need to be completed for those SBT that are exported.

There are not major cost differences between the two interpretations, so we have only provided a single cost estimate.

Our cost estimates for the Australian proposal included processing of the 445,000 individual fish measurements and tag numbers. These costs are not included for Japan's proposal as this proposal does not have a requirement for individual fish data to be provided to the Secretariat.

- a) Setup costs
 - i) Indirect software development cost - \$30,000
 - ii) Hardware - \$0
 - iii) Training & education – not estimated
- b) Annual costs
 - i) Data Entry - \$5,000
 - ii) Follow-up, corrections, reconciliation, reporting - \$5,000
 - iii) Ongoing training – not estimated
- c) Administrative comments
 - i) See text...

a) Setup Costs

The proposal is for a paper based CDS that has many similarities with the existing CCSBT TIS scheme. Consequently, the Secretariat's existing infrastructure can be used without additional outlay for new hardware. In addition, some of the software required for this proposal can be developed by modifying the existing TIS software that was developed by the Secretariat. The new software would be developed by the Data Manager, but there would be indirect costs associated with the employment of a temporary staff Member to assist the Data Manager with normal duties during the software development period.

As with the Australian proposal, we have not attempted to estimate training costs. However, we again suggest that full instruction sessions and documentation be provided to representatives from each Member and Cooperating Non-Member.

b) Annual Costs

We estimated simple data entry costs to be approximately \$4,000 per year (see **Attachment B**). However, this assumes that the documents are provided in English as is done with the current TIS. The proposal allows documents to be provided in either English or Japanese, which will increase the costs due to a need for translation. We have assumed that this, plus processing landing/harvest documents (provided in accordance with 5.1) and processing of electronic records provided in 5.8 would increase the data entry and filing costs by at least \$1,000 to \$5,000 per year.

As we did for the Australian proposal, we have estimated that the cost of following-up for missing data, obtaining corrections for errors, conduction reconciliations between exports and imports, and providing TIS reports to be the same as for data entry (i.e. in this case, \$5,000).

c) Administrative Comments

The proposed CDS Catch Document is a single document that incorporates Catch, Farming, Landing, Export and Import sections. For some operations, it may be necessary to divide this document into two separate documents (e.g. 1: Catch and Farming; 2: Landing & Harvest, Export and Import). In this case, the second document would need its own document number as well as the document number for the first

document. We also wonder whether the transshipment part of the catch section might be better incorporated as part of the landing section.

Our remaining comments and suggestions relate to administrative issues that we have experienced with the CCSBT TIS which are also relevant to Japan's CDS proposal. The last two comments are also relevant to Australia's CDS proposal.

- Japan's CDS proposal uses the existing TIS re-export document. However, the existing TIS re-export document is flawed and could be redesigned in the following ways:
 - The re-export document does not contain the document number of the relevant TIS (or a Catch Document for a CDS). Therefore if the re-export document arrives without the associated TIS document it is very difficult (often impossible) to match to the original TIS document. In addition, multiple re-export documents (together with associated documents) are often posted/faxed together. Due to the lack of a TIS document number on the re-export document, it is often difficult and time consuming to match each TIS document with the relevant re-export document.
 - The re-export document allows multiple TIS documents to be associated with a single re-export document². This makes it hard to detect potential fraud (over use of a single TIS or catch document) because it is impossible to know how much of the re-export came from each original TIS document. It would be better to only allow 1 TIS (or catch document) to be associated with each re-export document. Alternatively, the re-export document should specify the precise catch that came from each associated TIS document.
 - Sections 4 and 5 of the re-export document should be linked such that line 1 of the re-exported fish related to line 1 of the imported fish.
- In section 5.7, it may be worthwhile adding three items of information, these being: Fresh/Frozen, Name of Exporter and Name of Importer. This is because when the Secretariat conducts its reconciliation of TIS documents and subsequently requests importing Members to locate missing documents, the importers have often asked for this information to help them locate those documents.
- The proposal allows minimal modifications to be made to the standard Catch Document. See our comment about this in relation to Australia's proposal.
- The Catch Document has a number of locations where either Name and Address, or Name and Title are required. We recommend that these be replaced with Name and a CCSBT assigned identification number³. This would make the document smaller (no need to write the address), enable the document to be completed faster, improve the speed (and thus reduce the cost) of data entry, improve data quality (fewer errors) and reduce the amount of Japanese/English translation required.

² For example, a single re-export document for only 0.3t having three TIS documents attached, each with tonnages exceeding 17.0t.

³ The CCSBT Secretariat (or even CCSBT Members) could assign a unique identifier to a company or person on receipt of a form containing Name, Title (if relevant) and Address etc. This unique identifier would then be used instead of the address on all future documents. A list of CCSBT identification numbers and associated details (name, address etc.) could be made available to Members on the private area of the CCSBT web site.

Estimated Data Entry Costs for the Japanese CDS proposal

| Document Type | Secretariat data entry time per document (as a % of a TIS document) | Estimated number of documents | | | | | Estimated total cost (\$AUD) to data enter |
|---|---|-------------------------------|-----|-----|----|----|--|
| | | AU | NZ | JP | TW | KR | |
| Assumption (1): Catch Documents are required for all SBT caught regardless of whether they are exported. | | | | | | | |
| Catch Document (catch, farm & landing sections) | 150% | 60 | 151 | 177 | 59 | 8 | \$1,522 |
| Catch Document (harvest, export & import sections) | 75% | 1194 | 151 | 177 | 59 | 8 | \$2,658 |
| Re-export Document | 500% | 0 | 0 | 17 | 0 | 0 | \$190 |
| | | | | | | | Total 4,370 |
| Assumption (2): Catch Documents are only required for those SBT that are exported. | | | | | | | |
| Catch Document | 225% | 1194 | 151 | 7 | 59 | 8 | \$3,575 |
| Re-export Document | 500% | 0 | 0 | 17 | 0 | 0 | \$190 |
| | | | | | | | Total \$3,765 |

Estimates of data entry time

We estimate that the proposed catch document (CD) contains over double (~225%) the information that exists on the existing TIS document. We have therefore assumed that the average cost to enter a CD is 225% that of a single TIS form (which is \$2.23). We also estimate that re-export documents take about 5 times as long to process as a single TIS document.

Estimated number of documents

The number of re-export documents has been estimated as the number of re-export documents issued by each Member in 2006. The number of catch documents were estimated as follows:

- For New Zealand, Taiwan and Korea, the number of documents was assumed to be the same as the number of TIS forms each Member issued in 2006.
- For Japan, the number of documents for assumption “1” was calculated as 3 times that of Taiwan; and for assumption “2” it was calculated as the same as the number of TIS forms issued by Japan in 2006.
- For Australia, assumption “1” the number of catch documents (catch, farm and landing sections) was estimated as the number of catch documents Australia estimated it would produce for its CDS proposal, and the number of catch documents (harvest, export & import sections) was estimated as the number of TIS forms issued by Australia in 2006. For assumption “2” the number of catch documents was estimated as the number of TIS forms issued by Australia in 2006.