

Forest Management Planning Group Summary Report



NATIONAL COUNCIL FOR FOREST RESEARCH & DEVELOPMENT
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Introduction

The Forest Policy Review Group (FPRG), which concluded its work in March 2012, identified a series of strategic actions relating to management of the forest resource. It recommended that a system to standardise data requirements, on an electronic platform, for private woodland managers/owners should be introduced in consultation with sector stakeholders. It further recommended a mandatory requirement for a standardised Management Plan for privately owned woodlands, with a commitment for provision and updating of same as a condition of afforestation and as a condition of roads and other support measures. Management Plans could also be used as support for felling licence applications. The current format and scope of Management Plans was to be revised to support SFM, facilitate certification, the forecasting of future roundwood supply, felling compliance and public good functions and incorporate their design, submission, updating, review and analysis into the iFORIS system while ensuring alignment between private and public sector management planning systems.

The COFORD Council in furtherance of this recommendation established a Forest Management Planning Group (FMPG) in May 2012 with a remit to advise the Forest Service on ways to:

- (a) Devise and implement a national system of forest management planning for forests, in order to facilitate best practice, efficient and cost effective management and use of the national forest resource both state and privately owned with due reference to the Report of the Forest Policy Review Group;
- (b) Enable forest management plans to be used for production forecasting and reporting purposes in conjunction with the National Forest Inventory and other national models and systems;
- (c) Contribute to establishing a felling licence system, which would provide for increased efficiencies in harvest planning, reporting and regulation;
- (d) Support voluntary forest certification; and
- (e) Facilitate electronic submission of felling licence applications and forest management plans.

Table 1: FMPG Composition

Eugene Hendrick - Forest Sector Development Division (DAFM) - Chair
Frank Barrett (Forest Service)
John Casey (Teagasc)
Pat Farrington (Forest Service) - Recording secretary - Deceased
Noel Heffernan (Forest Service)
Myles McDonagh (Coillte Teoranta)
Aaron McNulty (IFA) - Replaced by Geraldine O Sullivan (IFA)
Fergus Moore (Forest Service)
John Joe O'Boyle (Northern Ireland Forest Service)
John Phelan (COFORD Council)
Donal Whelan (ITGA/COFORD Council)

The FMPG included representatives from across the forest sector (Table 1). Mr Henry Phillips (consultant) was engaged to provide technical support to the FMPG following a tender competition.

Working of the Group

The FMPG met on twelve occasions between May 2012 and October 2014. The initial focus of the FMPG was on the development of an agreed Forest Management Plan template which would facilitate best practice, efficient and cost effective management while supporting national forecasting and facilitating certification and licensing.

A series of draft templates were produced and considered by the FMPG. At an early stage the FMPG decided that a phased introduction of the new FMP would be the most appropriate approach with the link to forecasting and the facility to combine FMPs being the last elements to be introduced.

The FMPG discussed the scope of the FMP and considered the degree of complexity, the timing for its submission, the planning horizon, whether there should be a simpler FMP for smaller forests and how to engage forest owners in the management of their forests. The modalities around any new FMP were considered in depth.

A draft FMP template was considered and following a series of revisions to make completion more straightforward and user friendly, the clarification of data entry requirements (mandatory or voluntary) and the definition of the options for various data fields, the template was tested in collaboration with the Forest Service on a privately owned plantation. Following this initial testing, the draft template underwent a number of revisions and a supporting data collection field sheet and management issues checklist was developed.

The revised template was tested by Henry Phillips (consultant) on a selection of privately owned plantations of varying sizes and ages. Following an offer from Teagasc to test the template among their client list, a presentation was made to their advisors on the FMP template and supporting field sheet and documentation. Teagasc then tested the template and provided valuable feedback in terms of the practicality for its completion.

To facilitate certification, the FMPG agreed that the template should include a series of annexes with standard text(s) that are generally a requirement for management plans under forest certification. These were developed based on a combination of certification guidance and experience.

The FMPG was updated on a regular basis regarding the progress of the new Forestry Bill, felling licensing and the implications if any regarding FMPs.

The Irish Forest and Forest Products Association (IFFPA) and the Association of Irish Forestry Consultants (AIFC) both requested information on the template and the implications, if any, on their members when a new forest management planning process is introduced. It was decided that rather than provide them with interim information which was subject to change, that a consultation meeting would be held once the template was at a more advanced stage. Accordingly, a public consultation meeting was organised in collaboration with Teagasc and representatives from the IFFPA, AIFC, FSC Ireland, IFA Farm Forestry Committee, Irish Environmental Pillar, Irish Forestry Unit Trust (IForUT), producer groups and forest companies who had been issued with the template and other documentation in advance, attended.

Overall the FMP template was well received by the meeting. Based on the feedback during the meeting, a small number of amendments were made to the template.

The final meeting of the FMPG was held on 9th October, 2014. The chair thanked the group and Henry Phillips in particular, for their inputs over more than 2 years in bringing the FMP process forward.

Agreed Outputs from FMPRG

1. Forest Management Plans

1.1 Management Plan Template

The agreed FMP template including the amendments arising from the public consultation is shown in Appendix I. The annexes to facilitate certification are available on request and their titles are shown in Appendix 2. The completion of these annexes is voluntary and intended solely as an aid to certification.

1.2 FMP Threshold

The FMP threshold for grant-aided afforestation is 5 ha. Although the average private forest plantation is circa 8 ha, the Forest Service clarified that this had reduced in recent years to 6.17 ha in 2013, so any threshold above the agreed 5 ha could exclude a substantial area of grant-aided afforestation.

1.3 Grant-aid for FMP

While it is envisaged that grant-aid for FMP's will be paid, such grant-aid will be subject to the availability of funds each year. Grant-aid for an FMP will be on an individual contract basis. However the rules/modality around this are not yet finalized. Existing grant-aid for management plans is targeted at forests in receipt of premium. Consideration of aid for non-grant-aided forests will be given under the 2014 - 2020 Programme, subject to availability of funding.

1.4 FMP Submission

The FMP is to be submitted in year 12 for grant-aided afforestation. This is a compromise between a Forest Service requirement for compliance with premium payment requirements and the degree of development of the crop. Payment of the 12th and subsequent premiums will be subject to the submission of an approved FMP.

FMPs for areas of 5 ha and greater can only be submitted by a registered forester in respect of afforestation scheme plantations currently in receipt of premiums.

FMPs for areas less than the 5 ha threshold (grant-aided and non-grant-aided) can be submitted by the forest owner.

The preferred method of submission will be online through the Forest Service IFORIS/iNET portal. The system will be user-friendly with an online help facility and use of drop down listings/choices where possible.

When submitting an FMP for a grant-aided plantation the user can either accept the existing digitised plot layout or digitise a new FMP layer which will rest above this.

1.5 Data Quality

Landowners will need to be informed that the responsibility for data quality rests with the provider of the data. Where FMP data forms the basis for a felling licence application, there will be legal requirement that the relevant data is accurate. The submission system will however include a number of basic data quality checks around species, yield class, rotation length, and crop parameters.

1.6 FMP Revisions

Once entered, the FMP can be considered as a live document and it can be updated as and when required depending upon site, management and market requirements.

However if a felling licence has been issued based on an approved plan any significant changes or revisions to a plan may require a reissuing of the licence based on a revised plan. The onus is on the landowner to ensure that any change of circumstance or revision to an FMP does not invalidate a felling licence held by that owner or contravene any condition attached to such a licence. If in doubt, the matter should be queried with the Forest Service before the authority granted under the licence is exercised.

1.7 FMP and Felling Licence

The FMP online template will include a felling licence application facility/module and some of the fields from the FMP may be used to automatically populate the felling licence application.

1.8 Multiple Areas

A separate FMP will be required for each grant-aided afforestation contract of 5 ha or more in the initial roll out of the system. However the merging of multiple contracts will be considered in subsequent release(s). For non grant-aided areas the FMP can comprise more than one forest area, with an upper limit related to compliance with environmental designation thresholds (see section 4.1).

1.9 FMP and Form 2

The Form 2 (application for 1st grant and 1st premium) has been redesigned to include some of the fields included in the FMP e.g. overall and specific management objectives. This will be implemented when Form 2 submission process moves to online.

1.10 Downloading and printing plans

The development specification will allow users to download and print their plan information in standard industry format.

2. Felling Licence

2.1 Submission

It is expected that the new Forest Service felling licence system (currently under development) will allow for online submission of felling licences in subsequent development phases, and this facility should include the online submission of FMPs.

The felling licence application will include some of the same fields as the FMP.

Felling licence application can be separate from an FMP application/submission. However the FMP online template will include a felling licence application facility/module and some of the fields from the FMP may be used to automatically populate the felling licence application.

It will be possible to submit paper applications for felling licences.

Felling licence applications will not need to be signed and/or submitted by an approved / registered forester.

If a forest management plan is revised or updated significantly this may impact on the felling licence issued

which may need to be amended, revoked or reissued. The onus is on the landowner to ensure that any change of circumstance or revision to an FMP does not invalidate a felling licence held by that owner or contravene any condition attached to such a licence. If in doubt, the matter should be queried with the Forest Service before the authority granted under the licence is exercised.

3. IT and Software Development

The Forest Service has stated that the new forestry schemes and other tasks would take until early 2015 to complete, with the new felling licence system, (which is dependent on the new Forestry Act) coming into effect mid 2015. After this date, depending on resources, work would commence on the development of the phase 1 FMP plan in IFORIS, populated via iNET/Form2, and on the Forest Management Plan System for grant-aided and non-grant-aided areas.

4. Further Work Required

4.1 Multiple Areas for FMP

For non grant-aided areas it was agreed that the FMP could comprise more than one forest area, with an upper limit related to compliance with environmental designation thresholds. The group was of the view that size of area encompassed by such FMPs needed further consideration and the development of related guidance.

4.2 Management Feedback and Future Developments

While it had not been possible to address the objective of providing management feedback to those submitting FMPs, once the FMP submission system is in place that this requirement will be revisited.

The first release of the FMP system will provide a platform for future developments based on user feedback and stakeholder requirements.

4.3 Felling Licence

For large estates multiple Management Plans may be required to cover large geographical areas. Data submission for such plans will need to be considered further.

Appendix I – Forest Management Plan Template

Forest Management Plan Phase I

Agreed Template Specification

October 2014

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Introduction

The overall progression from a basic FMP meeting the requirements in relation to system framework that will lead to a national system of FMP for all forests – providing qualitative and quantitative data on an electronic platform capable of consolidation at national, regional and level - to a fully functioning FMP system supporting certification and national forecasting is outlined in Figure 1. This foresees a start point with basic data entry, simple reporting and electronic submission and the capacity to facilitate felling and roading approvals.

The progression from Phase I - a relatively simple FMP - to Phase II is not unduly difficult or complex apart from the facility to combine two or more FMPs, while the development of Phase II with forecasting capacity linking in with GROWFOR and or Forest Yield would involve significant programming and complexity.

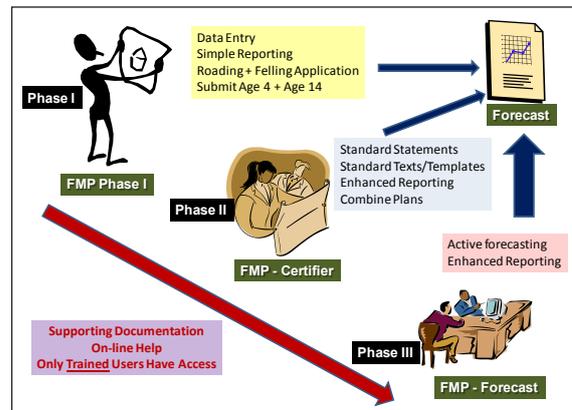


Figure 1: Development of FMP System

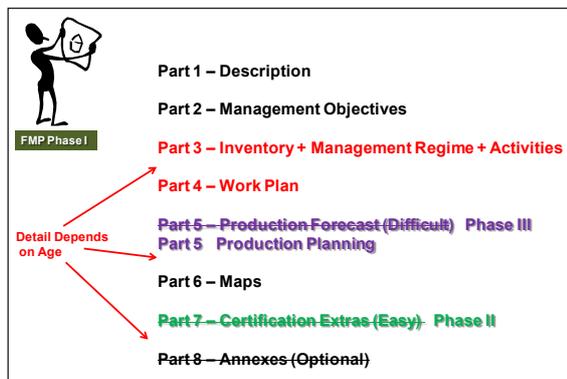


Figure 2: Proposed Scope of FMP Phase I

The various headings and data entry fields are now outlined in detail under parts (1-6) of the FMP. The following conventions are used for each of the data entry fields:-

- V** Indicates that data entry is **voluntary** and left to the discretion of the user.
- M** Indicates that data entry is **mandatory**.
- V/M** Indicates that data entry is **voluntary but may become mandatory** depending on specific circumstances which are outlined in the accompanying text.

Thresholds

The threshold for FMP Phase I is not decided as yet. Any threshold for the FMP should be considered in conjunction with any thresholds for felling and road approvals.

Part 1 – Description **M** + **V**

Part 1 identifies the ownership, any agent acting on behalf of the owner and together with the map(s) in Appendix 1, the location of the area encompassed by the FMP, hereafter referred to as the forest. It allows the user to enter free text to describe any relevant management history or particular features which will impact on the proposed future management of the forest.

PART 1 OWNERSHIP + DESCRIPTION	
Owner	<input type="text"/>
Agent	<input type="text"/>
Location	<input type="text"/>
County	<input type="text"/>
Townland(s)	<input type="text"/>
Nearest Town	<input type="text"/>
GPS Entrance	<input type="text"/>
Elevation / Aspect	<input type="text"/>
Soil Type	<input type="text"/>
Description + Management History	<input type="text"/>
Features	<input type="text"/>

Figure 3: Part 1 FMP Phase I

The completion of Part 1 is compulsory but only for the Owner, Agent, Location and Townland fields. All other fields are voluntary, although their completion will add to the value and quality of the FMP.

Location **M** is a free text which describes the location of the forest and any particular preferred routes to access same. It is a mandatory field. It is limited to 800 alphanumeric characters including spaces.

County **M** is a lookup field provided by the system where the user is prompted to select the County within which the forest lies. This is a mandatory field

Townland(s) **M** is a lookup field provided by the system where the user is provided with a list of valid townlands based on the county selected from which to select the townland where the forest lies. There will be a facility to specify two townland(s). This is a mandatory field.

Nearest Town **M** allows the user to specify the nearest town and its approximate distance from the forest. This information will help either contractors or management companies or agents or others to readily locate the forest. It is a free text field and is mandatory. It is limited to 20 alphabetic characters including spaces.

GPS Entrance  is the six digit Irish Grid Easting and Northing coordinates at the entrance to the forest. Where there is as yet no entrance then the user can specify the approximate location of one. It facilitates easy identification and location by hauliers, contractors and third parties. It is a voluntary field. It is limited to 13 characters with the first six being numeric, the seventh a comma and the last six numeric.

Elevation/Aspect  describes the average height above sea level in metres and the aspect of the forest both of which may have implications for its future management. It is a free text field limited to 600 alphanumeric characters including spaces. It is a mandatory field.

Soil Type  is the principal soil type that best describes the area. The user can either select from a drop down menu of soil types or select other and enter their own description. This is a voluntary field. The field is alphanumeric and limited to 20 characters. The list of main soil types is taken from the National Forest Inventory and users can refer to this if in doubt about soil type definitions.

- Acid brown earth
- Alluvium
- Basin peat (<30cm)
- Basin peat (>30cm)
- Blanket peat
- Brown earth
- Brown podzolic
- Gley
- Grey brown podzolic
- Limestone pavement
- Lithosol
- Peaty gley
- Peaty podsol
- Podsol
- Regosol
- Rendzina
- Sand
- Other

Description + Management History  describes the forest in terms of age, species, stage of development, main silvicultural system, timber quality, health status, any particular management problems or issues e.g. trespass or access, soil type and management history to date. It is a mandatory field and should be updated each time the FMP is revised. It is a free text field limited to 2,500 alphanumeric characters including spaces.

Features  describes any particular feature of the forest that will impact on future management or which will be the subject of particular attention e.g. badger set, recorded monument, watercourse. It is a free text field limited to 2,500 alphanumeric characters including spaces. It is a voluntary field but if completed should be updated in light of the status of the particular feature(s) identified.

Part 2 – Management Objectives

The user is requested to select at least one management goal for the forest from a drop down menu. The facility will be there to enter up to three management objectives, the order in which they are selected reflecting their priority in terms of management. These are high level objectives and there is the capacity to enter specific objectives for individual plots and or sub-compartments in Part 3. This is a mandatory field.

If the user does not agree with any of the three predefined objectives then he/she can select “Other” and is then prompted to specify this objective. This is an alphanumeric field limited to 200 characters.

Objective	Description
1	Commercial timber production while adhering with principles of SFM
2	Commercial non-timber benefits
3	Environmental benefits and services
4	Other - Please specify

Figure 4: Overall Objective FMP Phase I

Part 3 – Inventory, Management Regime and Activities

This is the main data entry part of the FMP and the data entered will be used for (a) reporting, (b) input to forecasting, (c) selected input to felling application, (d) input to harvest road pre-approval, (e) facilitate certification and (f) compilation of the Work Plan. It is important to note that data entered can be used by the forest authority to determine if there are any significant differences with the iForis layer or replanting / reforestation requirements. The data are grouped under a number of headings which could constitute a particular screen within the eventual FMP system.

General

GPC Plot Ref	General							
	Compt	Sub	Area	Forest Type	Land Use	Mgmt Objective	Constraints	Year Inventory Updated
1	1	1	2.7	CHF		Timber	None	2011
1		2	3.1	CHF		Timber	None	2005
2		3	1.8	BHF		Landscape	None	2005
3		4	0.5	NON	SCRUB	Biodiversity	P_Species	2005
4		5	3.2	CHF		Timber	ARCH	2011
5		6	2.4	MHFC		Recreation	None	2005

There will be an option within the FMP system to either accept existing parcel boundaries or revise / digitise the boundaries. If the user chooses to accept the existing boundaries, then he/she can either continue to use the plot numbers or alternatively can assign a compartment and sub-compartment number to each of the plots.

Figure 5: General Details FMP Phase I

Area

The user enters the plot gross area in hectares to two decimal places.

Forest Type

The user is prompted by a drop down menu and/or check box to select the most appropriate category to describe the plot. Only one forest type is allowed per plot / sub-compartment. These are:-

BHF	Broadleaf High Forest
CHF	Conifer High Forest
COP	Coppice forest
MHF	Mixed High Forest
NON	Non forest area

This is a mandatory field limited to three alphabetic characters. Definitions are included in Annex II.

Land Use Type

This is a further categorisation and allows for a more complete description of the sub-compartment or plot. Depending on the forest type, the range of valid land use types will be displayed. Thus for example, if the Forest Type is CHF, only Blown, Burned, Temporarily unplanted or blank (no entry) are valid land use types. A blank entry implies forest as the land use type. Only one land use type is allowed per plot / sub-compartment. These are:-

BARE	Unplanted land within the forest
BLOWN	Blown area
BURNED	Burned area
MISC	Catch all use type e.g. buildings, car parks
SCRUB	Scrub
WLOG	Land which is waterlogged
TUP	Temporarily unplanted
UNDEV	Tree areas incapable of developing into high forest
WATER	Lakes, ponds

This is a mandatory field limited to six alphabetic characters. Definitions are included in Annex II.

Management Objective 

This refers to the primary management objective for the plot. It can be different to the overall high level objective for the forest. The user is prompted by a drop down menu to select one objective. The possibilities are:-

Biodiversity	Areas managed for biodiversity
Hunting	Includes areas managed for hunting and sporting leases
Landscape	Areas managed primarily for landscape purposes
Protection	Includes buffer areas around features (excludes water)
Recreation	Areas managed primarily for the provision of recreation
Riparian	Protection of water quality including riparian buffer zones
Timber	Primary purpose is production of saleable timber
Other	None of the above and the user can specify

This is a mandatory field for each plot. It is alphabetic and limited to fourteen characters.

Constraints 

This identifies the main constraint, if any, to the management of the plot / sub-compartment. The constraint, if any, will be linked to the management objective set previously. The user is prompted by a drop down menu to select one constraint. Where two or more constraints exist, then the user should select the one having the greatest impact on the future management. The possibilities are:-

None	No constraint limiting achieving management objective
Access_P	Quality of public road infrastructure
Access_R	Quality of ROW
ARCH	Presence of an archaeological feature or monument
Desig Area	Located in, adjoining or close proximity to a designated area e.g. SAC, SPA, pNHA, NHA, statutory Nature Reserve, National Park
Landscape	Located in landscape area in Local Authority plans
Protected_Habitat	Presence of a protected habitat type
Protected_Species	Presence of a protected species e.g. white orchid
Terrain	Slope or ground roughness or condition limits management
Utility	Area through which an ESB or underground (gas) utility line passes
Other	Catch all for all other constraints

This is a mandatory field for each plot. It is alphabetic and limited to twenty alphabetic characters. To assist in identifying whether the presence of a particular species or habitat is protected, owners should contact the National Parks and Wildlife Service.

Forest Inventory Details 

Forest Inventory Details				
Species	Mixture	P Year	Canopy	Yield Class
SS	Pure	1994 R	100	18
SS	Pure	1994 R	100	14
Ash	Pure	1994 A	100	6
		N		
SS	N_Int	1994 A	70	24
HL	N_Int	1994 A	30	14
Ash	Int	1994 A	35	6 N
NS	Int	1994 A	35	16 N
CP	Int	1994 A	30	14 N

Figure 6: Inventory Details FMP Phase I

Forest inventory refers to the systematic collection of data and forest information for assessment or analysis. It is recognised that there is no standard or code of practice for forest inventory in the private sector while Coillte has re-defined its inventory process which is supported by a Code of Practice and subject to internal checks and audits. Where there has not been an official inventory, the user should use a combination of (a) species map(s), (b) previous management plan where applicable, (c) field assessment(s) and (d) local knowledge as aids in completing this section.

Species 

This is the main species (by area) within the plot. Where the Forest Type has been classed as CHF, BHF or MHF the user is prompted to select one species from a drop down menu of tree species abbreviations or alter-

natively from a list of species with common and botanical name arranged in alphabetic order.

The list of species should ideally be that compiled by the Forest Authority. There are however differences between the species abbreviations in the Afforestation Schemes manual and those used by Coillte. To accommodate these differences, the system will allow for both abbreviations e.g. for oak species Coillte uses Oak while the Schemes Manual uses RO (Red Oak), SO (Sessile Oak) and PO (Pedunculate Oak). Thus Oak, PO, RO and SO will all be acceptable.

Where there is a second species (by area), the user should be prompted to select it from a drop down menu of tree species abbreviations. Where there is a third species, again the user should be prompted to select it from the drop down menu.

The number of species within a plot / sub-compartment is limited to four. Where more than four, then the user should apportion the canopy percentage across the four main species.

This is a mandatory field. It is limited to four alphabetic characters. Note that it is possible to enter a broadleaf species where the Land Use Type is SCRUB.

The system should check for each plot/sub-compartment that the species selected is compatible with the forest type. Thus if the user selects SS for the only species within the plot / sub-compartment and MHF or BHF is the selected Forest Type, an error message should alert the user.

Mixture (Type)

This refers to whether the mixture type within the plot / sub-compartment. The user is prompted to select one mixture type from a drop down menu. The possibilities are:-

Pure	Single tree species
Intimate	The species are intimately mixed throughout the plot / sub-compartment
N_Int	The species are planted as separate blocks within the plot / sub-compartment

Where there is only one species then it is classed as Pure. This is a mandatory field where a valid tree species has been entered.

P Year

This refers to the main planting year within which the planting or regeneration was completed for the particular plot / sub-compartment. The planting year has implications for forecasting future volumes through the determination of age. Areas planted in September or later should be recorded as being planted the following year.

The user will be prompted to enter a four digit planting year and a single character for origin i.e. **A** = afforestation, **R** = reforestation and **N** = natural regeneration. This is a mandatory field where a valid tree species has been entered, limited to four numeric characters having a value within a specified range.

The system should check whether the year entered appears reasonable i.e. not greater than the current year but not less than a specified reference year e.g. 1900. In some instances, the planting year may be unknown and in this instance an estimate or approximation will suffice. The Forest Service will provide guidance on line in determining the estimated planting year when it is unknown.

Canopy

This is the percentage of the tree canopy occupied by the species in question. It will be used to apportion area within the plot / sub-compartment to that particular species. It is normally expressed as a percentage with a valid range from 1% to 100%. As the range of values is relatively large, the user should enter the value directly. This is a mandatory field, where there is a valid tree species entered, with a maximum of three numeric characters and a valid range from 1 to 100. If the Forest Type has been classed as NON then it will not be possible to enter a value under Canopy. The system should check that the value entered is within the valid range. The system should also check that the total canopy percentage equals 100.

Yield Class

This is the yield class, real or notional, of the species within the plot / sub-compartment. The user will be prompted to select a yield class from a valid range of yield classes for the particular species entered. Where the yield class is estimated / nominal and not the result of any measurement of top height and/or basal area, the user should select the yield class which has an **N** abbreviation e.g. 22N indicating that it has not been measured. Nominal

yield classes can be less reliable than measured yield class and their demarcation is necessary to indicate a lower degree of reliability in relation to any forecast data based on them. This is a mandatory field where there is a valid species. It comprises up to three alphanumeric characters based on valid lookup tables specific to each species.

Comment 

This allows the user to enter a note or relevant remark against the plot / sub-compartment e.g. low stocking due to damage by late frost in 2009 or LP now beginning to dominate. This is a free text field which allows the user to enter up to 400 alphanumeric characters. This a voluntary field.

Part 4 – Work Plan 

Planned Activities 

Planned Activities			
First Activity	Planned Year	Second Activity	Planned Year
Paths	2012	Inventory	2014
Paths	2012	Inventory	2014
Inventory	2014		
None			
Road Repa	2012		
Paths			
Shaping	2014		

Figure 7: Planned Activities FMP Phase I

controlled by regulation are indicated with an * to alert users that permission / approval is required before they can commence.

Normally a management plan contains a ten year period within which a range of activities are planned to occur, excluding thinning and clearfell which have a longer planning horizon. The activities entered here will be used to compile an operational 5 year plan which will provide a summary of the activities, their location (plot / sub-compartment) and their timing.

The entry of planned activities is voluntary unless the planned activity is controlled by regulation and the FMP forms part of the application process. Activities which are controlled

- Aerial Fert *
- Drain Repairs
- Fence Repairs
- Fertilise
- Firelines
- Harvesting *
- Inventory
- None
- Other
- Paths
- Protection
- Pruning
- Road Constr *
- Road Upgrade
- Road Repairs
- Shaping

First Activity 

The user will be prompted to select an activity from a drop down list of possible activities. If the planned activity is not on the list, the user should select Other, whereupon they will be prompted to enter a brief description of the planned activity - this user defined activity will be limited to 20 alphanumeric characters. It is quite valid that no activity would be planned for the particular plot / sub-compartment. In this instance the user can select None or make no entry. To make it mandatory would require additional input by the user which may have little value. The underlying assumption is that if nothing is entered, then nothing is actually planned to take place within the following ten years. However if a non-regulated activity does take place within the lifetime of the FMP e.g. drainage repair or construction of firelines, then there are no regulatory implications for the forest owner. If a regulated activity is planned within the FMP period, e.g. road construction, then the field becomes mandatory and the user must enter the year the activity is planned.

Planned Year 

Once the user has entered a planned activity, then they will be prompted to enter a valid year within which the activity should occur. This is only a mandatory field when a planned activity has been entered. The system should provide a drop down list of 10 individual years from the current year in question e.g. 2013 to 2022 from which the user selects one.W

Second and Third Activity 

These are similar to First Activity.

Part 5 – Production Planning

Harvest Prescription

The harvest prescription section of the FMP allows the user to set out the planned thinning(s) and rotation for each plot sub-compartment. In doing this the user is prompted by a series of lookup tables and boxes which provide aids to the decisions around thinning and rotation length.

First Thin	Rotation Type	Fell Year	Timing	Road Status	Harvest Area (%)
2017	Standard	2034	All Year	Roaded	70
2017	Standard	2040	Summer	Roaded	90
	Extended	2070	All Year	Roaded	
				Roaded	
2010	Technical	2029	Summer	Roaded	95
2015	CCF		All Year	Unroaded	80

The entry of data under the Harvest Prescription is voluntary unless the FMP is a requirement of grant-aid and the age is 14 years or greater or where the FMP forms part of a felling application. However, the entry of information here will improve the relevance and quality of the FMP and provide the owner with valuable information on the longer term harvesting planned.

Figure 8: Harvest Prescription FMP Phase I

First Thin

This is the year when it is planned to undertake the first thinning or in the case of thinned crops the year in which the first thinning took place or is estimated to have taken place. The user is prompted to enter a year which is a four digit numeric value. The field is only mandatory when the age of the plot / sub-compartment is greater than or equal to 14.

Rotation Type

The user is prompted to select a value from a drop down list. There are six possibilities. MMAI is the rotation of maximum mean annual increment and is equivalent to the rotation of maximum volume production. **Standard** is the rotation age specified by the Forest Service in the late 1970s and is age of MMAI¹ less 20% for Sitka and Norway, age of MMAI less 30% for Lodgepole and age of MMAI for all other conifer species. It was an approximation of the financial rotation. As there was no Standard rotation for broadleaves specified at that time, the rotation of MMAI is taken by default as the nearest approximation. As the values for Standard have not been revised, it would be prudent to undertake such a review prior to the implementation of the FMP. **Reduced** is a rotation less than standard (-2 or more) and is usually prescribed due to concerns about crop stability. **Technical** is a technical rotation which is normally prescribed in order to produce a standard product or tree size at the age of clearfell e.g. rotation to produce 0.7m³ average tree size at clearfell. CCF indicates continuous forest cover and as such it is not a rotation type but classifies the plot / sub-compartment as never being felled but rather under a continuous thinning regime. Extended indicates an extended rotation (+ 4 years or more) over a standard rotation. This could be for a variety of reasons including landscape, biodiversity or to await the felling of a more attractive adjoining or close by area.

- MMAI
- Standard
- Reduced
- Technical
- Extended
- CCF

Fell Year

Once the user has selected the rotation type, they are prompted to enter a fell year. When a user enters a fell year, the system should provide an estimate of the crop top height and average tree size at this age to inform the user who may then want to change the fell year based on the information provided. The four digit numeric field is only mandatory when the age of the plot / sub-compartment is greater than or equal to 14 or when the FMP is required in advance of a felling licence application. The system should check to ensure that the fell year entered is either equal to or greater than the current year.

¹The age when the mean annual increment is at a maximum i.e. volume production is maximised

Timing 

This indicates at what time during the year the planned harvesting can take place. Some sites due to a combination of soils, site factors can only be thinned during summer months, while others due to restrictions around designated areas and protected species and/or protected habitats can only be harvested at specific times during the year (summer or winter). The user should select the relevant timing of harvesting from a drop down list. There are three possibilities - Summer, Winter and All Year. This is a voluntary field.

Access Status 

This indicates whether there is adequate / sufficient roading to allow the harvesting to take place. There are two possibilities. Adequate means that there is sufficient roading infrastructure for the planned harvesting to go ahead. Inadequate means that harvesting cannot proceed until such time as either (a) the roading infrastructure is upgraded to a sufficient standard e.g. an existing track is upgraded to a road or a ROW or (b) a new road is constructed. This is a voluntary field.

Harvest Area 

This is an estimate of the percentage of the plot area that will be subject to harvesting. This can vary from 100% to as low as perhaps 50% for a number of reasons. The user is prompted to select a value from a drop down list within the range 50 to 100 in five point intervals. If a user does not select a value then the system will use the value entered for productive area to reduce the gross volumes forecast. This is a voluntary field. However its completion greatly improves the quality of any volume forecasting.

Regeneration Plans 

This section of the FMP is intended as an aid to forest certification where regeneration plans and or species percentages are a requirement. In the event that regeneration is a requirement of the felling licence, the section can be used to demonstrate compliance.

Regen Type	Period	Regeneration Plans								Comment
		First Species	%	Second Species	%	Third Species	%	Fourth Species	%	
Artificial	2	SS	70	OB	30					Timber
Artificial	2	SS	80	OB	20					Timber
Natural	6	Ash	100							Landscape
Natural										Biodiversity Area
Artificial	2	SS	65	HL	15	OB	20			Timber
Artificial	2	SS		SS		SS				Timber

Figure 9: Regeneration Plan

The user can specify up to four species per plot / sub-compartment and indicate what percentage each will occupy of the plot / sub-compartment area. The comment field allows the user to indicate an objective or special feature relating to that plot or sub-compartment.

Regen(eration) Type 

The user can specify one of three regeneration types. N = natural, A = artificial i.e. planting or C = coppice. It is a voluntary field unless regeneration conditions apply to the felling licence. In the event that regeneration comprises more than one type, the user should specify the main type.

Period 

This is the time period after clearfelling or final regeneration felling within which regeneration is to take place. This is a numeric field within the range 0 to 10. It is a voluntary field unless regeneration conditions apply to the felling licence.

First Species 

The % species (area) is a three character numeric field within the range 1 to 100. The system should check that the sum of percentages adds up to 100 and if not display a warning message. It is a voluntary field unless regeneration conditions apply to the felling licence.

Regen(eration) Type 

The user can specify one of three regeneration types. N = natural, A = artificial i.e. planting or C = coppice. It is a voluntary field unless regeneration conditions apply to the felling licence.

Second Species 

Same as for first species.

Third Species 

Same as for first species.

Fourth Species 

Same as for first species.

Comment 

The comment field allows the user to specify a management objective to highlight a specific feature relating to the sub-compartment and its planned regeneration. It is a voluntary field.

Part 6 – Maps

1	Location Map	Generated by the system
2	GPC Map + Ortho	Generated by the system
3	Inventory Map + Ortho	Generated by the system
4	Activity Map + Ortho	Generated by the system
5	Fire Plan + Map	Scanned by User

The user should be able to generate and print if required one of a series of four basic maps. The maps should be generated by the system based on the inputs by the user.

The location map is self explanatory.

The GPC Map + Ortho will refer only to those FMPs where this is available (2006 onwards). For older FMPS this will not be an option unless the user has digitised this as a layer .

Inventory Map + Ortho refers to a species map based on the inventory detail provided by the user. The user should be prompted as to what parameters are to be shown e.g. species, yield class.

Activity Map + Ortho refers to two specific possibilities. The first is the list of planned activities entered into the Work Plan, while the second refers to the harvest prescription. The user should be prompted to select which option is relevant.

Fire Plan + Map - there will be a facility whereby a user can scan a copy of the fire plan for the forest where this is available.

Field Data Collection

A draft field data collection sheet was developed based on the elements of the FMP Basic. This was initially tested with the Forest Service and then on a range of properties by Henry Phillips. In May 2014, Teagasc advisors following a presentation on the FMP undertook further field testing. The version as tested is shown in Annex III.

MANAGEMENT CHECKLIST YEAR 10 TO 20

Tick boxes if you have or intend to carry out the following operations	Yes	No	N/A
Maintain fences, drains and silt traps			
Maintain firebreaks and access tracks			
Monitor crops for signs of insect and fungal damage and take appropriate action			
Carry out foliar analysis and apply fertiliser if necessary			
Install and maintain inspection paths at 100m intervals to monitor crops performance			
Remove or partly remove conifers from broadleaved mixtures. If conifers are not removed on time they will take over and dominate broadleaved trees. Premiums may be adjusted if conifers suppress broadleaved trees			
Assess stocking rates and volume of crop and prepare for thinning. First thinning usually takes place between 18 and 25			
Apply to the Forest Service for a felling license before thinning			
Market timber for sale and monitor volume removed. Owners should consider a cooperative approach when thinning. Larger volumes will improve sale and marketing of timber. Advice is available from a number of organisations. Contact Forest Service for more details			
Assess need for harvesting road and construct if necessary			
Repair roads after harvesting			
Other			

GENERAL COMMENTS

Declaration by Approved Forester _____

I declare that I have carried out a field assessment to prepare this Management Plan and have correctly recorded and updated all species, areas and plot boundaries on the attached certified species map.

Signed:

Date of Field Assessment:

Date of Report

Signed:

Date

Forest Owner

Annex 2 – Definitions

Forest Type

Broadleaf High Forest (BHF): An area of evenly distributed high forest with a minimum 20% productive area, where more than 80% of the trees are broadleaves (including Birch). Minimum size of is 0.1 ha.

Conifer High Forest (CHF): An area of evenly distributed high forest with a minimum 20% productive area, where more than 80% of the trees are conifers. Minimum size of Sub Compartment is 0.25 ha.

Mixed High Forest (MHF): An area of evenly distributed conifer and broadleaf (including Birch) high forest with a minimum productive area of 20%. Either the conifer or broadleaf crop must occupy at least 20% of the stocked area. Minimum size of Sub Compartment is 0.1 ha.

Coppice (COP): An area of broadleaf forest managed originating from coppice and managed under a coppice or coppice-with-standard system

NON (Not Forest): Any area that does not satisfy one of the four forest types - BHF, CHF, MHF, COP.

Land Use Types (LUT)

Bare (BARE): Bare land, which has never been planted. Minimum size of Plot is 0.2 ha.

Windblown (BLOWN): An area where more than 80% of the crops in the Plot have blown over and have not yet been removed. Minimum size of Plot is 0.2 ha.

Burned (BURNED): An area where more than 80% of the crops in the Plot have been burned and have not yet been restocked. Minimum size of Plot is 0.2 ha.

Miscellaneous (MISC): Permanent structures, such as buildings, yards, car parks, and archaeological sites. Minimum size of Plot is 0.1 ha.

Felled (TUP): An area where more than 80% of the Plot has been felled (i.e. a merchantable crop has been removed) and has not yet been reforested, provided there is still evidence of the former crop (stumps etc). Minimum size of Plot is 0.2 ha.

Scrub (SCRUB): An area of more than 80% broadleaf stunted trees or shrubs, which lack the potential to develop as high forest. Minimum size of Plot is 0.2 ha.

Waterlogged (WLOG): Land which is unplatable because it is waterlogged for most or all of the year. Minimum size of Plot is 0.2 ha.

Undeveloped (UNDEV): An area where more than 80% of a conifer crop lacks the potential to develop as high forest (i.e. has failed). Minimum size of Plot is 0.2 ha.

Water (WATER): Lakes, ponds, reservoirs and rivers where the width of the river within the Plot is at least 20m (i.e. if the Plot boundary and the centre of the river coincide, the river must be at least 40m wide). Minimum size of Plot is 0.2 ha.

Annex 3: Filed Data Collection

Owner _____

Reference _____

Date _____

General	Plot Ref					
	Compt					
	Sub					
	Area					
	Forest Type	BHF	CHF	COP	MHF	NON
	Land Use Type	Bare	Blown	Burned	Misc	Scrub
		Swamp	TUP	Undev	Water	
	Mgmt Objective	Bio	Hunting	NFTP	Prot	Lndscp
		Recr	Timb	Water	Wlfe	Other
	Constraints	None	Acc_P	Acc_R	Arch	D_Area
P_Hab		P_Sp	Terrain	Utility	Lndscp	
					Other	

Harvest Prescription	Thin Regime	Stdn	Red	Sol	No Thin	
	Thin Cycle					
	First Thin					
	Thin Area (%)					
	Rotation Type	Stdn	Red	Tech	Extnd	CCF
	Fell Year					
	Critical Top Ht					
	Timing	Summer	All Year			
	Road Status	Adeq.	Inadeq.			
	Cfel Area (%)					

Forest Inventory	Year Updated				
	Productive Area				
	Mixture Type	Int	N_Int	Pure	
	Species No.	1	2	3	4
	Species				
	P Year				
	Canopy %				
	Yield Class				

History	First Harvest Event	
	No. Events	

Plot Data	Plot No.	1	2	3	4	5
	Stems					
	Mean DBH					
	BA					
	Top Ht					

Planned Activities	First Activity	None	Drn_R	Fnc_R	Prot	Paths	Fire
		Shape	Prune	Rd_R	Rd_U	Fert	Inv
		Rd_C	A_Fert	Harv	Other		
	Planned Year						
	% Area						
	Second Activity	None	Drn_R	Fnc_R	Prot	Paths	Fire
		Shape	Prune	Rd_R	Rd_U	Fert	Inv
		Rd_C	A_Fert	Harv	Other		
	Planned Year						
	% Area						
	Third Activity	None	Drn_R	Fnc_R	Prot	Paths	Fire
		Shape	Prune	Rd_R	Rd_U	Fert	Inv
	Rd_C	A_Fert	Harv	Other			
Planned Year							
% Area							

Regn	Species No.	1	2	3	4
	Species				
	Regn Type	A/N/C	A/N/C	A/N/C	A/N/C
	%				

Comments: _____

Problems / Issues on site	Extent	Rank	
No problem/issue			Notes
Trespass			
Windblow			
Hare/Rabbit damage			
Deer damage			
Vole damage			
Squirrel damage			
Impeded drainage			
Flooding			
Vegetation competition			
Frost damage			
Fire damage			
Exposure			
Drought			
Nutrition			
Disease			
Dumping			
Anti-social behaviour			
Other			

<p>Extent: 1 to 5 indicating the significance of the problem, where 1=<21% trees affected, 2 = 21-40%, 3 = 41-60%, 4 =61-80% and 5 = 81-100%</p>	<p>Rank: In ascending order with 1 = most significant problem</p>
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Notes:

Appendix II – List of Annexes to Facilitate Certification

Chemical Usage Record
Consultation Record
Environmental Impact Appraisal Form
Forest Records
Forest Safety Statement
Harvest Site Monitoring Form
Hazard Identification and Risk Assessment Form
Letter of Commitment