

Preferred Routes Project:

Developing a GIS solution for the sustainable transport of timber in Ireland

Gary O'Brien, Michael Pedini, Ger Devlin



Forecast for roundwood

- Increase in forest cover
- Result in an increase in production capacity.
 - 7 million m³ by 2028
- Role of private forestry in this increase.
- FORECAST Project
 - GIS Tools > County, regional and national levels
- Coford Roundwood Demand Group
 - 6.038 million m³ by 2020

Roads

- Increase in haulage
- Concern about effect on Irish roads
 - damage
 - safety
- Local authorities responsible for local roads
 - limited budget
- Concerns from industry about restrictions
- Work already done on haulage routes.
- GIS routes map to identify vulnerable sections of road that are to be avoided by timber trucks
 - Also times to be avoided

Aims

- To identify the issues involved with timber transport in Ireland.
- To determine the GIS criteria that are necessary in order to properly classify roads and to implement a GIS solution to this timber transport problem
- To develop an interactive agreed routes GIS map for timber transport for a selected area.
- To develop a mobile app device (RouteTagger) that allows certain conditions to be recorded on a route and uploaded onto a database.

Steps of the Project

- Scoping/Stakeholder Analysis
- GIS Data Review
- Development of classification matrix and model
- Development of draft map
- Validation of the map and underlying model
- Mobile App Development (Ger Devlin)

Stakeholder Analysis

- Important the end product meets the requirements of the stakeholders who will be using it.
- Identify stakeholders in relation to timber transport
- Determine primary issues, concerns or expectations
 - FITG meetings
 - Interviews with stakeholders
- Establish the requirements of a GIS solution
 - Data
 - Functionality

Data Review

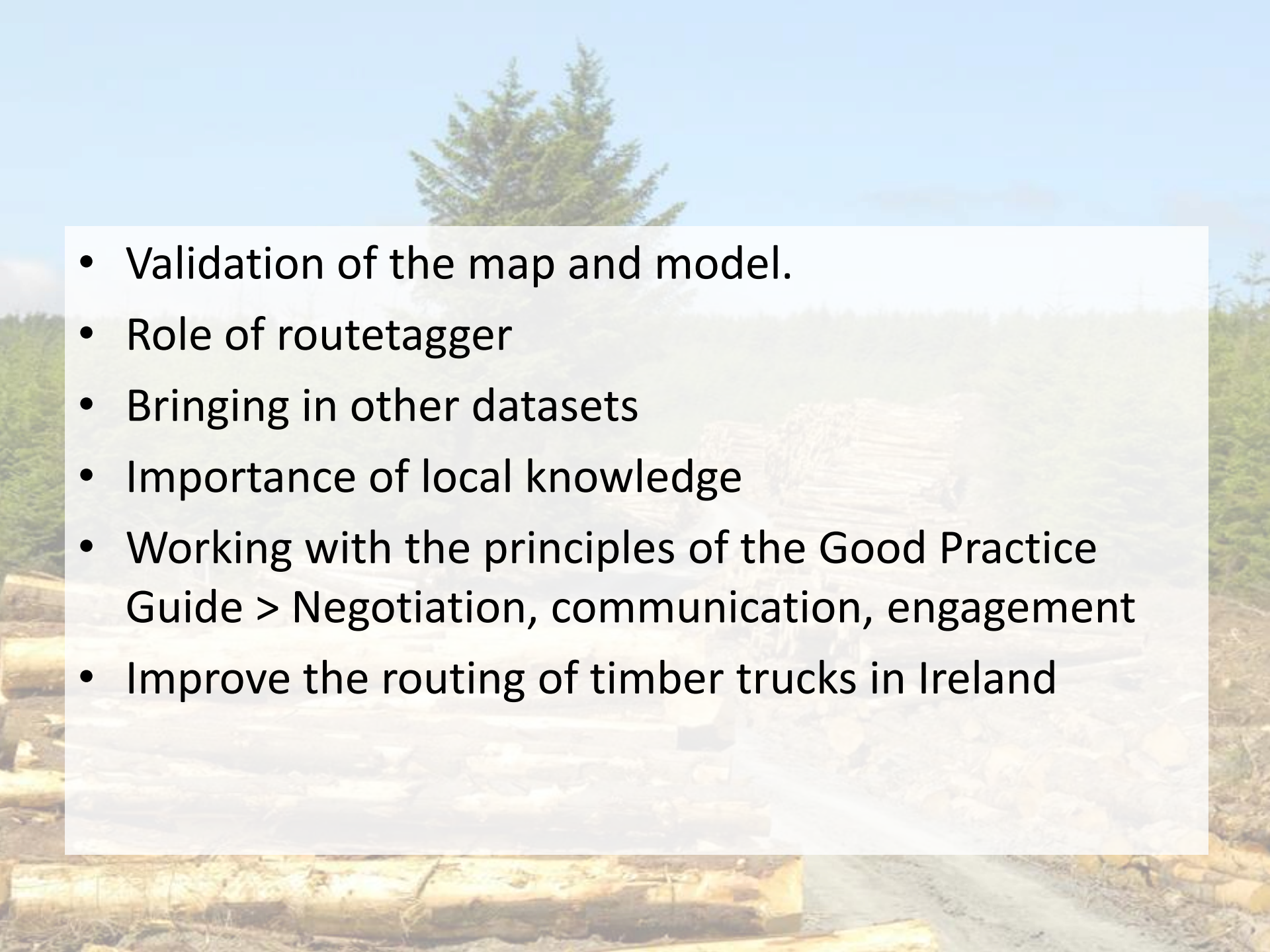
- Source road data
 - Councils
 - Local Government Management Authority
- Data Audit > inventory of datasets
- Assess content and quality of data
 - Accuracy, resolution, data source, scale, price.
 - Spatial and attribute > merging with other datasets
- Suitability to meet requirements > Data Gaps
- Design of a geodatabase to store the data
 - Specify relationships between features
 - Topological relationships

Develop Classification Matrix

- Classification of the road data under a number of different categories
- eg. – Road class, width, quality, weight limit, speed limit, height limit (bridges), gradient of road, acute corners.
- Opening and closing times of schools
- Thresholds will be established for each category that will assign a route as either Preferred, Consultation, Severely Restricted, or Excluded.
- Analysis to establish the thresholds for each category.

Draft Map

- The criteria and thresholds established in the previous step will allow a model to be created.
- Road data can be fed through this model that will assign a route classification to the inputted data.
- Generate a draft working interactive GIS map.
- Important that the map is practical and functional
- Use as a Decision Support Tool > Display spatial data
- Aid in the documentation, archiving, modification and visualization of data related to agreed routes.

- 
- Validation of the map and model.
 - Role of routetagger
 - Bringing in other datasets
 - Importance of local knowledge
 - Working with the principles of the Good Practice Guide > Negotiation, communication, engagement
 - Improve the routing of timber trucks in Ireland



Thank You!

Picture from
FITG (2014)