

Regional_workflow

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Protocol 3A: Regional model workflow

In this notebook, we will create a diagram for the workflow that regional modellers should follow under FishMIP Protocol 3A.

Loading libraries

```
library(DiagrammeR)
library(DiagrammeRsvg)
```

Designing workflow

```
grViz("digraph git_basics {
graph [
    margin = '0,0'
    newrank = true
    splines = false
    splines = compound
    nodesep = 0.3
    ranksep = 0.2
    overlap = true
    rankdir = TB]

node [
    shape = rectangle
    style = filled
    fillcolor = 'white'
    fontname = 'Helvetica,Arial,sans-serif'
    fontsize = 20
]

edge [
    fontname = 'Helvetica,Arial,sans-serif'
    fontsize = 30
    labelfontcolor = '#00000080'
    penwidth = 2
    shape = 'record']
```

```

Step_0[label = <<table border='0' cellborder='1' cellspacing='0' cellpadding='28'>
  <tr> <td bgcolor = '#92bde4'> <b>Step 0:</b><br/></td> </tr>
  <tr> <td bgcolor = '#e3eef8'>Identify which climate variables<br/>
  to use and how these are<br/>
  implemented<br/>
  </td> </tr>
</table>>]
Step_1 [label = <<table border='0' cellborder='1' cellspacing='0' cellpadding='28'>
  <tr> <td bgcolor = '#92bde4'> <b>Step 1:</b><br/></td> </tr>
  <tr> <td bgcolor = '#e3eef8'>Provide shapefile of your model<br/>
  domain and fill out model<br/>
  template<br/>
  </td> </tr>
</table>>]
Step_n [label = 'Is model spatial?' fillcolor = '#f6b979']
Step_2 [label = <<table border='0' cellborder='1' cellspacing='0' cellpadding='28'>
  <tr> <td bgcolor = '#92bde4'> <b>Step 2:</b><br/></td> </tr>
  <tr> <td bgcolor = '#e3eef8'>Visualise and extract input<br/>
  variables to see if bias correction<br/>
  is needed<br/>
  </td> </tr>
</table>>]
Step_3 [label = <<table border='0' cellborder='1' cellspacing='0' cellpadding='28'>
  <tr> <td bgcolor = '#92bde4'> <b>Step 3:</b><br/></td> </tr>
  <tr> <td bgcolor = '#e3eef8'>Determine if further downscaling<br/>
  is needed<br/>
  </td> </tr>
</table>>]
Step_4 [label = <<table border='0' cellborder='1' cellspacing='0' cellpadding='28'>
  <tr> <td bgcolor = '#92bde4'> <b>Step 4:</b><br/></td> </tr>
  <tr> <td bgcolor = '#e3eef8'>Match and extract fishing effort<br/>
  groupings to force your model<br/>
  </td> </tr>
</table>>
tooltip = 'Step 4:']
Step_5 [label = <<table border='0' cellborder='1' cellspacing='0' cellpadding='28'>
  <tr> <td bgcolor = '#92bde4'> <b>Step 5:</b><br/></td> </tr>
  <tr> <td bgcolor = '#e3eef8'>Calibrate model with<br/>
  observational data for reference<br/>
  period<br/>
  </td> </tr>
</table>>
tooltip = 'Step 5:']
Step_6 [label = <<table border='0' cellborder='1' cellspacing='0' cellpadding='28'>
  <tr> <td bgcolor = '#92bde4'> <b>Step 6:</b><br/></td> </tr>
  <tr> <td bgcolor = '#e3eef8'>Set up model with forcings for<br/>
  each comparative experimental<br/>
  run<br/>
  </td> </tr>
</table>>]
Step_7 [label = <<table border='0' cellborder='1' cellspacing='0' cellpadding='28'>
  <tr> <td bgcolor = '#92bde4'> <b>Step 7:</b><br/></td> </tr>
  <tr> <td bgcolor = '#e3eef8'>Output standard variables to<br/>

```

```

        compare with observations and<br/>
        across models over time/space<br/>
    </td> </tr>
</table>>]
Step_8 [label = <<table border='0' cellborder='1' cellspacing='0' cellpadding='28'>
    <tr> <td bgcolor = '#92bde4'> <b>Step 8:</b><br/></td> </tr>
    <tr> <td bgcolor = '#e3eef8'>Quality control checks and upload<br/>
        to FishMIP server<br/>
    </td> </tr>
</table>>]

subgraph sub_1 {

    Step_0 -> Step_1
    Step_1 -> Step_n [style = dotted]
    Step_n -> Step_2 [label = 'No' fontcolor = '#329932' style = dotted color = '#329932'
        fontname = 'bold Helvetica,Arial,sans-serif']
    Step_n -> Step_3 [label = 'Yes' fontcolor = '#d8ae2d' style = dotted color = '#d8ae2d'
        fontname = 'bold Helvetica,Arial,sans-serif']
    {Step_2 Step_3} -> Step_4
    Step_4 -> Step_5 [weight = 10 splines = line];
}

subgraph sub_2 {
    Step_5 -> Step_6 -> Step_7 -> Step_8
}

subgraph sub_3 {
    graph [rank = same]
    edge [style = invis,
        weight = 1]
    Step_0 -> Step_5[weight = 1]
}
}",
width = "100%", height = "100%")

```

