New LaTeX Style for FAO Yearbook *

Boris Veytsman†

2013/08/11, v0.1

Abstract

This package provides class for typesetting FAO Yearbook. This is a refactoring of the faoyeabook package

1 Introduction

The package faoyearbook [1] was written in 2011 for FAO Statistical Yearbook.

The package faosyb is a refactoring of this package. We use the lessons learned and incorporate new design requirements. We use some (actually plenty) code from the previous version, but since we do not have to be compatibility, we can correct some unfortunate decisions.

2 User Guide

The installation of the class follows the usual practice [2] for LaTeX packages:

1. Run latex on `faosyb.ins`. This will produce the LaTeX class `faosyb.cls`.
2. Put the file `faosyb.cls` to the place where LaTeX can find it (see [2] or the documentation for your TeX system).
3. Update the database of file names. Again, see [2] or the documentation for your TeX system for the system-specific details.
4. The file `faosyb.pdf` provides the documentation for the package (this is the file you are probably reading now).

As an alternative to items 2 and 3 you can just put the file `faosyb.cls` in the working directory where your `.tex` file is.

†borisv@lk.net, boris@varphi.com

2.1 Invocation

To use the class, put in the preamble of your document

`\documentclass[`⟨*options*⟩`]{faosyb}`

If the option `web` (default) is chosen, the pages of the book have the dimensions corresponding to A4 paper. However, if the option `print` is chosen, then the pages are printed on a wider area, and crop marks are added for the trimming.

If the option `issuu` is chosen, the internal links are transformed to external in the form suitable for http://www.issuu.com. Note that this option probably does not make much sense unless `web` option is also chosen. However, it is still possible to select both `print` and `issuu` option if someone needs it for an obscure purpose.

Some regional books are printed on A4 paper with slightly different margins. These options select alternative margins—either normal or narrow. Note that these options automatically select `print` setup, and should not be combined with the `print` option.

The option `Draft` (note the capitalization!) leads to the the large word 'DRAFT' printed across the pages. The standard LaTeX option `draft` leads to the same result, but it also makes other changes, most notably, in the behavior of the `\includegraphics` command and warnings.

`\ifprint` It is possible to query the current mode using the macro `\ifprint`, for example

```
\ifprint
  Stuff for print version
\else
  Stuff for web version
\fi
```

Any branch of this conditional may be empty, so web-only stuff can be coded as

```
\ifprint\else Web-only stuff\fi
```

`\includegraphics` There is a special facilty for `\includegraphics` command to choose a file depending on the current mode of the package. Namely, if there is a file `image_print.pdf` visible by LaTeX, then the commands `\includegraphics{image}` or `\includegraphics{image.pdf}` selects the file `image_print.pdf`. In the case this file is not found, the file `image.pdf` is selected instead. Similarly in the web mode the file `image_web.pdf` will be selected first, and only if it does not exist, `image.pdf` is selected. This rule works also for commands `\includeLargeGraphics` and `\includeExtraLargeGraphics` described below.

Note that at this time there is no similar facility for the `\input` command.

2.2 Setting Parameters

`\faoset` Some parameters in the class can be set with the command `\faoset{`⟨*key=value*⟩`}`,

for example

```
\faoset{bgcolor=blue}
```

Most of the parameters are explained below.

2.3 Fonts

`\narrowfamily` `\textnarrow` `\captionfamily` `\textcaption`

The class uses PT Sans fonts [3] for body text and Arev fonts [4] for math. It defines two additional families: Narrow and Caption, corresponding to the PT Sans Narrow and PT Sans Caption font. They can be selected by the declarations `\narrowfamily` and `\captionfamily` or by the commands `\textnarrow{`⟨*text*⟩`}` and `\textcaption{`⟨*text*⟩`}` following the usual LaTeX conventions. Note that since PT Sans does not provide math alphabet, this choice does not change the mathematical text.

PT Sans Narrow may be useful for typesetting tables, for example,

```
{\scriptsize\narrowfamily
\rowcolors{4}{@bgcolor!30}{@bgcolor!20}
\input{./Tables/P1.DEM_1.tex}}
```

2.4 Colors and Icons for Parts

A Yearbook is separated into parts (more on this below). Each part has its own color and icon. They are set by the keys `bgcolor` and `icon` of the `\faoset` command, for example,

```
\faoset{icon=./Icons/agriculture.png}
\faoset{icon=./Icons/population}
\faoset{bgcolor=blue}
\faoset{bgcolor=green!25!yellow}
```

The parameter for the `icon` key can be any file name (with or without extension), suitable for the `\includegraphics` command. The parameter for the `bgcolor` key can be specified in any form acceptable by xcolor package [5].

The key `tableheadcolor` sets the color for the headers of tables defined by `H` or `P` key (see Section 2.6). Normally it is 30% of the current `@bgcolor` color, but it can be set to any required value.

`\selecticon` `\selectcolor`

Note that `\faoset` command does not change the icon or background color immediately. When issued *before* `\part` command, it sets up icon and color for the next part. If needed, you can manually change this using `\selecticon` and `\selectcolor` commands. In most cases you should *not* use these commands.

`@bgcolor` `@tableheadcolor` `\currenticon`

After a `\part` command (or explicit `\selecticon` and `\selectcolor` command we can access the current values of the color in `@bgcolor`, `@tablecolor` colors and `\currenticon` macro.

2.5 Sectioning

\part
\section
\subsection

The main division of the text are \parts. The command \part{⟨*title*⟩} is used for numbered parts, while the command \part*{⟨*title*⟩} is used for unnumbered parts. The next division are \sections and \subsections. They are never numbered. The style does not use \chapters.

\EndPartIntro

The sections immediately following new parts are special: they are typeset in one column and cannot have floats. The command \EndPartIntro switches to the "normal" sections.

2.6 Floats

One of the most important changes from the previous version of the class [1] is the treatment of floats.

In standard LaTeX floats "float": they can be placed by the algorithm anywhere. The previous version made them "sticky": the author explicitly tells TeX where floats should be placed. However, to do so the class required the author to make explicity page breaks, which was not very convenient.

This version has a completely rewritten interface and algorithm for placing floats:

1. Like in standard LaTeX, authors do not normally provide page breaks—TeX tries to make this decision for them.
2. Like in the previous version, floats are put exactly where the authors want them—no default placing and second-guessing.

Here is how it is done.

The main unit of the book is *spread:* a verso page and the corresponding recto page. Each page is divided into four quarters, upper left, upper right, lower left and lower right. We will denote them `ul`, `ur`, `ll`, `lr` for the verso page and `UL`, `UR`, `LL`, `LR` for the recto page (Figure 1). We allow four kinds of floats:

Single floats occupy exactly one quarter. They are denoted as `S`.

Tall floats occupy two quarters stacked vertically (for example, `ul` and `ll`). They are denoted as `T`.

Wide floats occupy two quarters adjacent horizontally (for example, `LL` and `LR`). They are denoted as `W`.

Big floats occupy all four quarters on a page. They are denoted as `B`.

The parameters {⟨*type*⟩} and {⟨*location*⟩} are mandatory for floats, for example

```
\begin{map}{T}{ur}
  ...
\end{map}
\begin{chart}{S}{UL}
  ...
\end{chart}
```

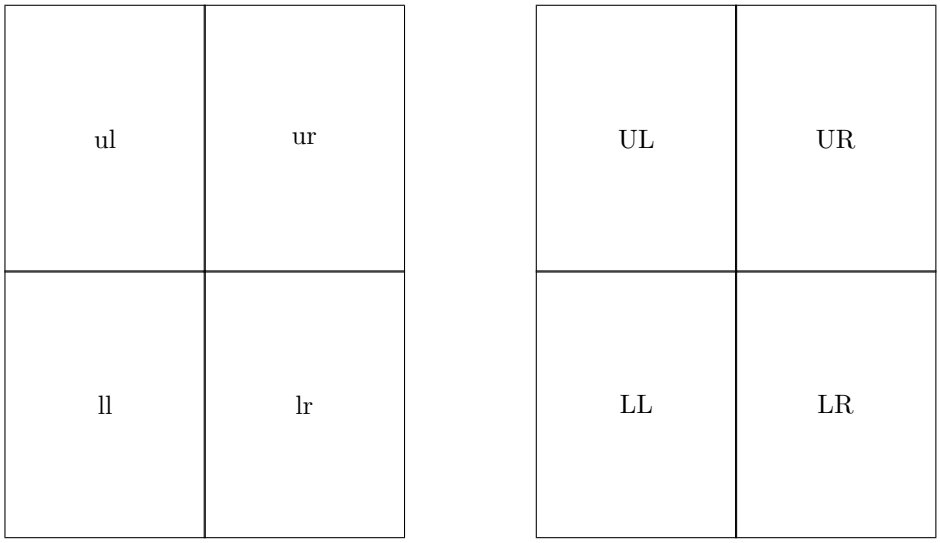

Figure 1: A Spread

For multiquarter floats the location is the location of the upper left corner, so Big float can use only `ul` or `UL` location.

Of course, not all combinations are valid: you cannot specify float as `{T}{ll}` or `{W}{UR}`, for example. If you use such combinations, the results may be unpredictable. Also it is not predictable what happens if you try to put overlapping floats (e.g. `{S}{UR}` and `{W}{UL}`).

There are two additional rules:

1. A verso page may have text and floats (still it is recommended that if it has text, then it should not have floats occupying the upper left corner).
2. A recto page may have *either* text `or` floats: if there are floats for this page, all text is moved to the following verso page.

`table` `chart` `map` `minitab`

There are three types of floats defined by the class:

table tabular material,

chart plots and other charts,

map mapped data.

minitab mini tables.

caption

Each of these kinds of material is typeset using the corresponding environment: `table`, `chart`, `minitab` or `map`. Note that the caption for each of these environments *must* precede the graphical material, for example:

```
\begin{chart}{B}{UL}
  \caption{Hunger Data}
  \label{chart:hunger}
  \includegraphics{hunger.pdf}
\end{chart}
```

\listoftables
\listofcharts
\listofmaps

The standard LaTeX has the command `\listoftables` to produce the list of tables in the document. Our class retains this command and produces two additional commands `\listofcharts` and `\listofmaps` with the obvious meaning.

2.7 Page Breaks

\clearpage
\cleardoublepage
\clearspread

Standard LaTeX has commands for immediate page break (e.g. `\clearpage`) and for switching to the next recto page, possibly ejecting the next verso page (`\cleardoublepage`). The class provides another command `\clearspread`. It switches to the next *verso* page, possibly ejecting the next recto page (and putting there floats intended for this page, if any).

2.8 Tables

To typeset numericall items one should use `d` column identifier with the format `d{`$\langle a.b \rangle$`}`, where a is the number of decimal in the integer part of the number, and b is the number of decimal digitst in the fractional part. For example, a number 12.345 corresponds to `d{2.3}`. The column headers are usually *not* numerical, so one need to use `\multicolumn` entries to typeset them. The class defines several such entries:

H produces a centered entry.

P produces an entry of a given length, for example, `P{1.5cm}`

C produces an entry of the length corresponding to the given number of numerical columns. For example, `C{2}` corresponds to a header of two numerical columns. Each column is assumed to be of the size enough to store -99.999.

\hhline

For the rules that do not span the table width `\hhline{`$\langle$*specificaiton*$\rangle$`}` command from the `hhline` package should be used. The `{`$\langle$*specification*$\rangle$`}` argument of this command has many variants, but for our purposes we need only one variant: the command `-` produces a horizontal line spanning one column. The color of this line is determined by the command `\arrayrulecolor{`$\langle$*color*$\rangle$`}`, issued in the last `>{`$\langle$*argument*$\rangle$`}` command before the `-` specification. Therefore the command `>{\arrayrulecolor{@tableheadcolor}}-` produces a line of the color `@tableheadcolor`, which is seen as the absence of line. The command `>{\arrayrulecolor{black}}---` produces a black line spanning three columns.

Thus if we have a four-column table and want a rule spanning columns 2–3, the following command should be issued:

```
\hhline{>{\arrayrulecolor{@tableheadcolor}}-% Column 1, no rule
  >{\arrayrulecolor{black}}--%  Columns 2 and 3, black rule
  >{\arrayrulecolor{@tableheadcolor}}-}% Column 4, no rule
```

The usual * specification may be used for repeating patterns, for example, `*{5}{-}` is equivalent to `-----`.

The vertical bar | specification in the `\hhline` argument means an interruption of the line. The interruption is by defalut a black interval, to make it the same color as the header background, use `>{\arrayrulecolor{@tableheadcolor}}|`.

2.9 Publication Descriptions

publication

FAO yearboook describes some FAO publications. These publications should be put inside the environment `publication`. The environment has one mandatory argument, which is the title of the publication, and one optional argument, which sets the file name of the publication cover. Note that the option argument, if present, must precede the mandatory one. If this argument is absent, no cover is included. Inside the environment the macros `\pDescription{`⟨*description*⟩`}`, `\pEdition{`⟨*year*⟩`}{`⟨*edition*⟩`}`, `\pWeb{`⟨*URL*⟩`}` and `\pCycle{`⟨*date*⟩`}` are used to typeset the corresponding items related to the publication. For example,

\pDescription
\pEdition
\pCycle
pWeb

```
\begin{publication}[./Plots/StateOfFoodAndAgriculture.png]{The State
    of Food and Agriculture}
  \pDescription{The State of Food and Agriculture, FAO's major
    annual flagship publication, aims at bringing to a wider
    audience balanced science-based assessments of important issues
    in the field of food and agriculture.  Each edition of the
    report contains a comprehensive, yet easily accessible, overview
    of a selected topic of major relevance for rural and
    agricultural development and for global food security.  This is
    supplemented by a synthetic overview of the current global
    agricultural situation.}
 \pEdition{2010}{Livestock in the balance}
 \pEdition{2011}{Women in Agriculture Closing the gender gap for
   development}
 \pCycle{May each year}
 \pWeb{http://www.fao.org/docrep/013/i2050e/i2050e00.htm}
\end{publication}
```

Note that, as in the example, some fields may be repeated.

Two spacing parameters can be used for typesetting of publications: `publicationskip` is the amount of additional space between the publications, while `publicationparskip` is the space between the paragraphs inside the publication environment. The default values correspond to the command

```
\faoset{publicationskip=6pt plus 2pt minus 2pt,
        publicationparskip=6pt plus 6pt minus 4pt}
```

2.10 Metadata

MetadataCollection
metadata

Each chart, map of table in the book has a *source*. Soruces are collected in the environemnt `MetadataCollection`, which consists of separate `metadata` environments. Each `metadata` environment has two obligatory arguments—the name of the source and the key. The key is used to identify the metadata in the charts, maps, tables and other objects. The environment may include other commands.

\source `\source{`⟨***source***⟩`}` sets the source of the data.

\owner `\owner{`⟨***owner***⟩`}` sets the owner of the data.

Note that there is no "description" command because any text which is not an argument of the commands above is considered to belong to the description of the data.

Example of the usage of these commands:

```
\begin{MetadataCollection}
\begin{metadata}{Agricultural population}{P1.DEM.FAO.POP.AGR}

   Agricultural population is defined as all persons depending for
   their livelihood on agriculture, hunting, fishing and forestry.
   It comprises all persons economically active in agriculture as
   well as their non-working dependents. It is not necessary that
   this referred population exclusively come from rural population.

   \source{FILL ME}
   \owner{FILL ME}
\end{metadata}
\end{MetadataCollection}
```

\refMetadata The metadata is referenced by the command `\refMetdata{`⟨*key*⟩`}`, for example

```
\refMetadata{P1.DEM.FAO.POP.AGR}
```

This command will be typset as

> Source: Agricultural population, page NNNN.

This command must *not* occur in the caption of the chart, map or table.

Note that the package automatically provides backreferencing: all charts, maps and tables where the medatada is referenced, are mentioned in the corresponding metadata section.

The sources of each chart, map or table can be shown in the lists of charts, tables, maps or not. The key `metadataInLists` (by default `false`) determines whether they are shown there. To make them visible, put before the lists

```
\faosetup{metadataInLists=true}
```

2.11 Concepts and Methods

`ConceptsAndMethods` The environment `ConceptsAndMethods` starts a new section "Concepts and Methods". Concepts and methods are collected in the series of `concept` environments. Each environment has one obligatory field: the name of the concept, for example:

```
\begin{ConceptsAndMethods}
  \begin{concept}{Gross domestic product}
    Gross domestic product (GDP) is the market value of all officially
    recognized final goods and services produced within a country in a
    given period of time.
  \end{concept}
  \begin{concept}{Gross state product}
    Gross state product (GSP), or gross regional product (GRP), is a
    measurement of the economic output of a state or province (i.e.,
    of a subnational entity). It is the sum of all value added by
    industries within the state and serves as a counterpart to the
    gross domestic product (GDP).
  \end{concept}
\end{ConceptsAndMethods}
```

2.12 Further Reading

`freading` The special environment `freading` is used for the "further reading" sections of the book. It starts the text from the new page and changes some defaults.

2.13 Subscripts in Text

`\textsubscript` The standard LaTeX defines `\textsuperscript`. The class adds a similar `\textsubscript` command.

References

[1] Boris Veytsman. *LaTeX Style for FAO Yearbook*. FAO UN, 2011.

[2] UK TeX Users Group. UK list of TeX frequently asked questions. http://www.tex.ac.uk/cgi-bin/texfaq2html, 2008.

[3] Pavel Farář. *Support Package for Free Fonts by ParaType*, May 2011. http://mirrors.ctan.org/fonts/paratype.

[4] Stephen G. Hartke. *Arev Sans for TeX and LaTeX*, May 2006. http://mirrors.ctan.org/fonts/arev.

[5] Uwe Kern. *Extending LaTeX's Color Facilities: the xcolor Package*, January 2007. http://mirrors.ctan.org/macros/latex/contrib/xcolor.

Index

Numbers written in italic refer to the page where the corresponding entry is described; numbers underlined refer to the code line of the definition; numbers in roman refer to the code lines where the entry is used.