

A8 Rasterdaten

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Manipulation von Rasterdaten

```
library(raster)
```

```
## Loading required package: sp
```

```
x <- raster()
```

```
x
```

```
## class      : RasterLayer
```

```
## dimensions : 180, 360, 64800 (nrow, ncol, ncell)
```

```
## resolution  : 1, 1 (x, y)
```

```
## extent      : -180, 180, -90, 90 (xmin, xmax, ymin, ymax)
```

```
## coord. ref. : +proj=longlat +datum=WGS84 +ellps=WGS84 +towgs84=0,0,0,0,0,0,0
```

Andere Parameter wählen

```
x1 <- raster(ncol=36, nrow=18, xmn=-1000, xmx=1000, ymn=-100,  
x1
```

```
## class      : RasterLayer  
## dimensions : 18, 36, 648  (nrow, ncol, ncell)  
## resolution : 55.55556, 55.55556  (x, y)  
## extent      : -1000, 1000, -100, 900  (xmin, xmax, ymin, ymax)  
## coord. ref. : NA
```

Den Zellen Werte zuordnen

```
r <- raster(ncol=10, nrow=10)
ncell(r)
```

```
## [1] 100
```

```
hasValues(r)
```

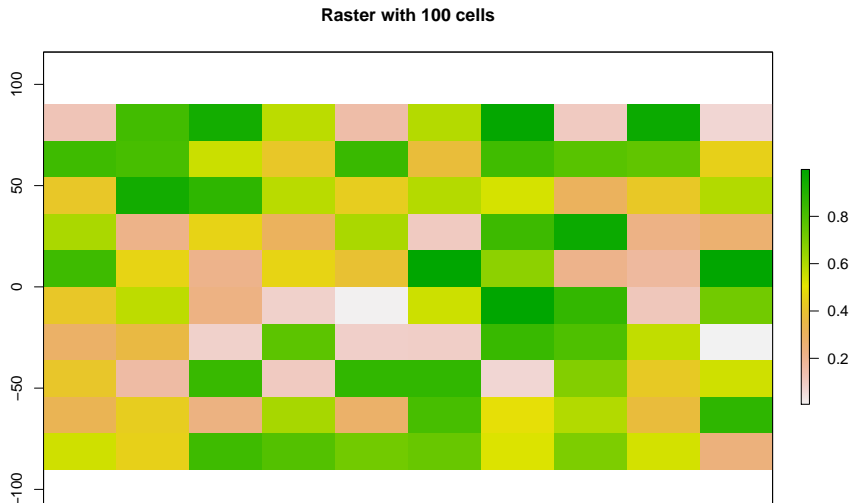
```
## [1] FALSE
```

```
values(r) <- runif(ncell(r))
hasValues(r)
```

```
## [1] TRUE
```

Das Ergebnis visualisieren

```
plot(r, main='Raster with 100 cells')
```



Import von Beispieldaten

```
link<-"https://raw.githubusercontent.com/GeoScripting-WUR/  
IntroToRaster/gh-pages/data/gewata.zip"
```

```
download.file(url = link, destfile = 'gewata.zip',  
              method = 'auto')  
unzip('gewata.zip')
```

```
list.files(pattern = glob2rx('*.tif'))
```

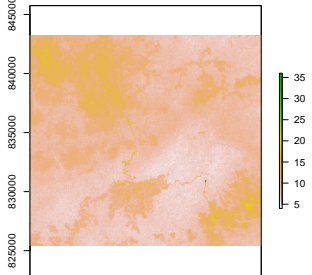
Import von Rasterdaten - .tif file

```
gewata <- raster::brick('../data/  
LE71700552001036SGS00_SR_Gewata_INT1U.tif')
```

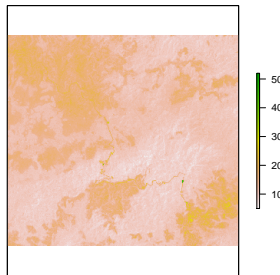
Erste plots erstellen

```
plot(gewata)
```

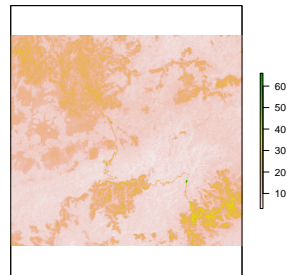
LE71700552001036SGS00_SR_Gewata_INT1U.1



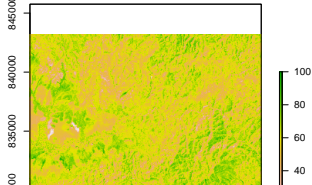
LE71700552001036SGS00_SR_Gewata_INT1U.2



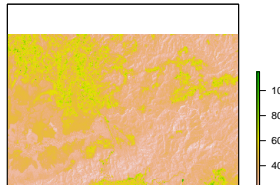
LE71700552001036SGS00_SR_Gewata_INT1U.3



LE71700552001036SGS00_SR_Gewata_INT1U.4



LE71700552001036SGS00_SR_Gewata_INT1U.5



LE71700552001036SGS00_SR_Gewata_INT1U.6



WorldClim - Global Climate Data

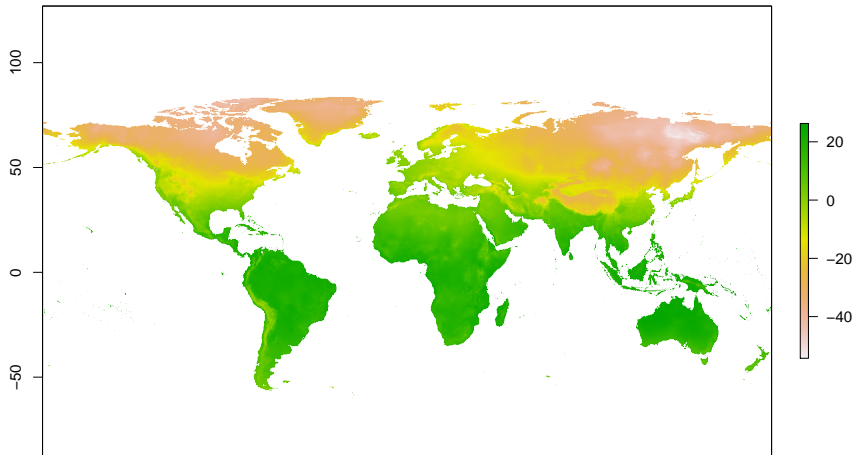
Free climate data for ecological modeling and GIS

```
# this will download
# global data on minimum temperature at 10' resolution
tmin <- raster::getData("worldclim", var = "tmin", res = 10)

tmin1 <- raster::raster( "../data/wc10/tmin1.tif")
tmin1 <- tmin1/10
```

Minimum Temperatur plotten

```
plot(tmin1)
```



- Neon - **Intro to Raster Data in R**
- Francisco Rodriguez-Sanchez - **Spatial data in R: Using R as a GIS**
- Robin Lovelace - **Geocomputation with R**