



Out[37]: <matplotlib.legend.Legend at 0x1b826618400>

From the above graph, it is clear that at the global level, the access to sanitation facilities improved over time – indicated by the % of people using at least basic sanitation service steadily increased from 2000 to 2017. Overall, there were still significant differences among different country income groups. The % of people using at least basic sanitation service was obviously positively related to the level of country income, with low income countries having the lowest percentage on average. However, when looking at the dynamic country income classification (figure on the left), meaning using year-on-year country income classification data and allowing countries to move among different groups from year to year, there seems to be no obvious improvement inside each income group overtime. There were even sharp drops from time to time, which was conflicting the global improving situation. It is suspected that this was due to the graduation of countries from relatively lower income groups to higher ones, and the sharp drops were caused by the graduation of relatively large countries. This suspicion is confirmed when the country income classification is made static - by using the classification in 2000 for all years (figure on the right, not allowing countries to move among groups). It is clear that, while the differences among different income groups still existed, all groups improved over time, except for high income countries which were already near 100%. The gaps between high income countries and all other income groups reduced considerably from 2000 to 2017.